R E P O R T R E S U M E S

ED 017 632 VT 000 682

PROCEEDINGS OF ANNUAL SOUTHERN REGIONAL RESEARCH CONFERENCE, AGRICULTURAL EDUCATION, "TOOLING UP FOR RESEARCH," (13TH, TEXAS TECHNOLOGICAL COLLEGE, JULY 29-31, 1964).

BY- LEACH, T.L. WEBB, EARL
TEXAS TECHNOLOGICAL COLL., LUBBOCK, DEPT.OF AGR.ED

PUB DATE 64

EDRS PRICE MF-$0.50 HC-$2.64 64P.

DESCRIPTORS- VOCATIONAL RETRAINING, *AGRICULTURAL EDUCATION, *EDUCATIONAL RESEARCH, PROGRAM ADMINISTRATION, ADULT FARMER EDUCATION, OFF FARM AGRICULTURAL OCCUPATIONS, VOCATIONAL AGRICULTURE, EDUCATIONAL NEEDS, FARMERS, FARM MECHANICS (OCCUPATION), VOCATIONAL EDUCATION, *RESEARCH NEEDS, ORGANIZATION, AGRICULTURAL OCCUPATIONS, PROGRAM EVALUATION, OCCUPATIONAL SURVEYS, HIGH SCHOOL GRADUATES, PROGRAM DEVELOPMENT, CONFERENCES, FINANCIAL SUPPORT, FARM MANAGEMENT, LOUISIANA, GEORGIA, OKLAHOMA, ARKANSAS, TEXAS,

THE PURPOSES OF THE CONFERENCE WERE TO CONSIDER PROBLEMS IN IMPLEMENTING AGRICULTURAL EDUCATION RESEARCH AND TO STUDY RECENT RESEARCH FINDINGS. TEACHER EDUCATORS, SUPERVISORS, COLLEGE PROFESSORS, CHAIRMEN, DIRECTORS AND DEANS, REPRESENTATIVES FROM INDUSTRY AND GOVERNMENT, TEACHERS, AND A SCHOOL ADMINISTRATOR WERE AMONG THE 42 PARTICIPANTS. SPEECHES INCLUDE--(1) "NEW PROGRAMS IN VOCATIONAL EDUCATION WITH IMPLICATIONS FOR RESEARCH AND DEVELOPMENT AS PROVIDED IN THE VOCATIONAL EDUCATION ACT OF 1963," BY DUANE M. NIELSEN, (2) "NEEDED RESEARCH IN EDUCATION," BY MORRIS S. WALLACE, (3) "THE FINANCIAL STRUCTURE FOR CONDUCTING RESEARCH," BY FRED D. RIGBY, (4) "A STRUCTURE FOR CONDUCTING RESEARCH," BY HERSCHEL T. LESTER, JR., (5) "FACTORS ASSOCIATED WITH SUCCESS OF ADULT EDUCATION IN VOCATIONAL AGRICULTURE IN ARKANSAS," AND (6) "THE CORE PROGRAM IN VOCATIONAL AGRICULTURE IN ARKANSAS," BY ROY W. ROBERTS, (7) "OFF-THE-FARM OCCUPATIONS SURVEY IN LOUISIANA," BY CHARLIE CURTIS, (8) "EDUCATIONAL NEEDS FOR AGRICULTURAL OCCUPATIONS IN A SELECTED AREA OF LOUISIANA," BY RICHARD G. MORRISON, (9) "IMPLEMENTING RESEARCH," BY GERALD W. THOMAS, (10) "AN ANALYSIS OF HIGH SCHOOL VOCATIONAL AGRICULTURE FROM EVALUATIONS OF GRADUATES IN THE PANHANDLE AREA OF TEXAS," BY LEWIS EGGENBERGER, (11) "THE FARMING PRACTICES OF FORMER VOCATIONAL AGRICULTURE AND NONVOCATIONAL AGRICULTURE STUDENTS IN SELECTED GEORGIA COUNTIES," BY GEORGE O'KELLEY, (12) "A STUDY OF THE EFFECT OF SELECTED CHARACTERISTICS OF TRAINEES IN FARM MECHANICS RETRAINING SCHOOLS UNDER THE AREA REDEVELOPMENT ACT IN OKLAHOMA," BY EVERETT D. EDINGTON, AND (13) "POLICIES AND PROCEDURES GOVERNING POST-HIGH SCHOOL TRAINING IN VOCATIONAL AGRICULTURE," BY W. M. MAHONEY. (JM)

ED017632

SOUTHERN REGIONAL RESEARCH CONFERENCE

Proceedings

1964

VT 00682

AGRICULTURAL EDUCATION DEPARTMENT

TEXAS TECHNOLOGICAL COLLEGE

LUBBOCK, TEXAS

Proceedings

of

Thirteenth Annual

SOUTHERN REGIONAL RESEARCH CONFERENCE

AGRICULTURAL EDUCATION

"TOOLING UP FOR RESEARCH"

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

THIS DOCUMENT HAS BEEN REPRODUCED EXACTLY AS RECEIVED FROM THE PERSON OR ORGANIZATION ORIGINATING IT. POINTS OF VIEW OR OPINIONS STATED DO NOT NECESSARILY REPRESENT OFFICIAL OFFICE OF EDUCATION POSITION OR POLICY.

Texas Technological College

July 29-31, 1964

Conference Chairmen

T. L. Leach - Texas Tech

Earl Webb - Texas A & M

Conference Secretary

Lewis Eggenberger - Texas Tech

TABLE OF CONTENTS

Roster of Conference Participants ii

Conference Program..... iv

First Session Proceedings..... 1

New Programs In Vocational Education With Implications For Research and Development As Provided In The Vocational Education Act of 1963 - Duane M. Nielsen..... 2

Second Session Proceedings 11

Needed Research In Education - Morris S. Wallace..... 12
An Analysis Of High School Vocational Agriculture From Evaluations Of Graduates In The Panhandle-Plains Area Of Texas - Lewis Eggenberger..... 16
The Farming Practices Of Former Vocational Agriculture And Non-Vocational Agriculture Students In Selected Georgia Counties - George O'Kelley..... 18

Third Session Proceedings..... 20

The Financial Structure For Conducting Research - Fred D. Rigby.. 21
A Structure For Conducting Research - Herschel T. Lester, Jr.... 25
A Study Of The Effect Of Selected Characteristics Of Trainees In Farm Mechanics Retraining Schools Under The Area Redevelopment Act In Oklahoma - Everett D. Edington..... 28
Factors Associated With Success Of Adult Education In Vocational Agriculture In Arkansas - Roy W. Roberts..... 30

Fourth Session Proceedings..... 33

Off-The-Farm Agricultural Occupations Survey In Louisiana - Charlie Curtis..... 34
Educational Needs For Agricultural Occupations In A Selected Area Of Louisiana - Richard G. Morrison..... 37

Fifth Session Proceedings..... 45

Business Meeting..... 45
Policies and Procedures Governing Post High School Training In Vocational Agriculture - W. M. Mahoney..... 46
Cool Front Hits South--Forecasts Incompleted - "Implementing Research" - Gerald W. Thomas..... 49
The Core Program In Vocational Agriculture In Arkansas - Roy W. Roberts..... 56

ROSTER OF CONFERENCE PARTICIPANTS

NAME	POSITION	STATE OR INSTITUTION
J. G. Bryant	State Supervisor	Georgia
Charlie Curtis	Teacher Educator	Louisiana State University
Lawrence Drabick	Research Sociologist	North Carolina State
Everett D. Edington	Teacher Educator	Oklahoma State University
Lewis Eggenberger	Teacher Educator	Texas Tech
H. W. Green	District Supervisor	Alabama
Bill Irick	Teacher Educator	Texas A&M University
Bill Jackson	Graduate Assistant	Texas A&M University
Earl H. Knebel	Teacher Educator	Texas A&M University
Walter Labay	Area Supervisor	Texas
T. L. Leach	Teacher Educator	Texas Tech
H. T. Lester	Vocational Research Director	University of Georgia
W. M. Mahoney	District Supervisor	South Carolina
Robert Montgomery	Teacher Educator	Auburn University
Richard Morrison	Representative, Eli Lilly Corp.	Indiana
Duane M. Nielsen	Specialist in Teacher Education and Research	U.S. Office of Education, Washington,D.C.
George L. O'Kelley	Teacher Educator	University of Georgia
J. R. Powell	Teacher Educator	Prairie View A & M
Robert R. Price	Teacher Educator	Oklahoma State University
Roy W. Roberts	Teacher Educator	University of Arkansas
John H. Rodgers	Teacher Educator	Clemson University
Vannoy Stewart	Teacher Educator	Sam Houston State College
Robert E. Taylor	Director of Center for Advanced Study & Research in Agricultural Education	Ohio State University
Earl S. Webb	Teacher Educator	Texas A&M University

INDIVIDUALS ATTENDING ONE OR MORE SESSIONS OF THE CONFERENCE

NAME	POSITION	INSTITUTION
J. Wayland Bennett	Associate Dean, School of Agriculture	Texas Tech
Waylon Carroll	Vocational Agriculture Teacher	Monterey High School Lubbock, Texas
Scottie Cooper	Vocational Agriculture Teacher	Meadow High School Meadow, Texas
R. C. Goodwin	President	Texas Tech
Herbert W. Grubb	Associate Professor Agricultural Economics	Texas Tech
Clark Harvey	Professor Agronomy & Range Management	Texas Tech
Frank A. Hudson	Associate Professor Animal Husbandry	Texas Tech
Chester Jaynes	Associate Professor Agronomy & Range Management	Texas Tech
Thomas Neely	Vocational Agriculture Teacher	Monterey High School Lubbock, Texas
Milton L. Peeples	Associate Professor Dairy Industry	Texas Tech
James Pirkey	Principal	Littlefield High School, Littlefield, Texas
James W. Reed	Vocational Agriculture Teacher	O'Donnell High School O'Donnell, Texas
Fred D. Rigby	Dean of Graduate School	Texas Tech
Gerald W. Thomas	Dean of School of Agriculture	Texas Tech
Elo Urbanovsky	Head, Horticulture, Park Administration & Entomology	Texas Tech
Morris S. Wallace	Professor and Head Education and Philosophy	Texas Tech
J.J. Willingham	Professor and Head Dairy Industry	Texas Tech
A. W. Young	Professor and Head Agronomy & Range Management	Texas Tech

CONFERENCE PROGRAM

TOOLING UP FOR RESEARCH

Conference Chairmen: T. L. Leach, Teacher Educator, Texas Tech
and
Earl S. Webb, Teacher Educator, Texas A&M University

Research Consultants: Duane M. Nielsen, Specialist in Teacher Education & Research, U.S. Office of Education, Washington, D. C.
and
Robert Taylor, Director of Center for Advanced Study & Research in Agricultural Education, Ohio State University

Conference Secretary: Lewis Eggenberger, Teacher Educator, Texas Tech

WEDNESDAY - July 29, 1964

8:30 Registration - Student Union, Mesa Room, Second Floor

9:00 First General Session	T. L. Leach, Presiding Teacher Educator, Texas Technological College
	H. W. Green, Recorder Supervisor, Alabama
Introductions	
9:10 Welcome	R. C. Goodwin, President Texas Technological College
9:20 Plans for the Conference	Earl S. Webb, Teacher Educator, Texas A&M Univ.
9:35 Tooling up for Research	Robert E. Taylor, Director Center for Advanced Study & Research in Agricultural Education, Ohio State Univ.
10:15 Break	
10:30 New Programs in Vocational Education	Duane M. Nielsen Specialist in Teacher Education & Research U.S. Office of Education Washington, D. C.
11:15 Discussion	
11:30 Announcements	
LUNCH	

1:30	Second General Session	Earl H. Knebel, Presiding Teacher Educator Texas A&M University Walter Labay, Recorder Supervisor, Texas
1:30	Needed Research in Education	Morris S. Wallace, Head Education and Philosophy Texas Technological College
2:00	Discussion	
2:10	An Analysis of High School Vocational Agriculture from Evaluations of Graduates in the Panhandle-Plains Area of Texas	Lewis Eggenberger Teacher Educator Texas Technological College
3:00	Break	
3:15	The Farming Practices of Former Vocational Agriculture and Non-Vocational Agriculture Students in Selected Georgia Counties	George O'Kelley Teacher Educator University of Georgia
4:00	Tour of Lubbock Vocational Agriculture School Farm Facilities	

THURSDAY, July 30, 1964

8:30	Third General Session	Lawrence W. Drabick, Presiding, Research Sociologist North Carolina State College W. M. Mahoney, Recorder Supervisor, South Carolina
8:30	Financial Structure for Conducting Research	Fred D. Rigby Dean of Graduate School Texas Technological College
8:50	State Structure for Conducting Research	J. G. Bryant, State Supervisor, Vocational Agricultural Education, Georgia
9:10	Departmental Structure for Conducting Research	H. T. Lester, Jr., Director of Research for Vocational Education, University of Georgia
9:30	The Effect of Selected Characteristics of Trainees in Farm Mechanics Retraining Schools Under the Area Redevelopment Act in Oklahoma	Everett D. Edington Teacher Educator Oklahoma State University
10:15	Break	

10:30	Factors Associated with Success of Adult Education in Agriculture	Roy W. Roberts Teacher Educator University of Arkansas
11:30	Announcements	
	LUNCH	
1:30	Fourth General Session	R.W. Montgomery, Presiding Teacher Educator Auburn University Vannoy Stewart, Recorder Teacher Educator Sam Houston State Teachers College
1:30	Educational Needs for Agricultural Occupations	Charlie Curtis Teacher Educator Louisiana State University and Richard Morrison Eli Lilly Corporation
2:30	Identifying Needed Competencies and Employment Opportunities in Agricultural Occupations	John H. Rogers Teacher Educator Clemson University
3:15	Tour	Plains Cotton Cooperative Marketing Association

Friday - July 31, 1964

8:00	Fifth General Session	Robert R. Price, Presiding Teacher Educator Oklahoma State University
8:00	Pilot Programs in South Carolina	W. M. Mahoney, Supervisor South Carolina
8:30	Implementing Research	Gerald W. Thomas, Dean School of Agriculture Texas Technological College
9:30	Vocational Agriculture Program Needed to Meet the Present Needs of Students	James Pirkey High School Principal Littlefield, Texas
10:00	Demonstration of Core Curriculum in Vocational Agriculture	Roy W. Roberts Teacher Educator University of Arkansas
10:45	Summary of Conference	Robert Taylor, Director of Center for Advanced Study & Research in Agricultural Education
11:00	Adjourn	

PROCEEDINGS OF THE CONFERENCE

First General Session

T. L. Leach, Texas, Presiding
H. W. Green, Alabama, Recorder

The Thirteenth Annual Southern Regional Research Conference was called to order by T. L. Leach, Department of Agricultural Education, Texas Technological College. Conference participants and guests were presented.

Dr. R. C. Goodwin, President of Texas Technological College, welcomed the participants to Texas and to Texas Technological College.

Earl S. Webb, Texas, Co-chairman of the conference, reviewed the plans for the conference.

Robert E. Taylor, Director of Center for Advanced Study and Research in Agricultural Education, which is located at Ohio State University, gave the keynote address, "Tooling Up for Research".

Duane M. Nielsen, Specialist in Teacher Education and Research, U. S. Office of Education, made a presentation, "New Programs in Vocational Education".

NEW PROGRAMS IN VOCATIONAL EDUCATION WITH IMPLICATIONS FOR RESEARCH AND DEVELOPMENT AS PROVIDED IN THE VOCATIONAL EDUCATION ACT OF 1963

Duane M. Nielsen
Specialist in Teacher Education and Research
U. S. Office of Education

I. A NEW CHARTER

The Vocational Education Act of 1963 (P.L. 88-210)

Vocationally serve ".....persons of all ages in all communities...."

- maintain, extend, and improve existing programs
- develop new programs
- provide part-time employment
- youth in high school
- people who have completed or left high school
- those with special education handicaps
- unemployed or displaced who need retraining
- continuing and upgrading courses
- ready access to high quality programs
- realistic programs for gainful employment opportunity
- suited to needs, interests and ability to benefit
- ancillary services
- research, training and experimentation

The Vocational Education Act of 1963 is dedicated to serving "..... persons of all ages in all communities...." It is premised on the thesis that education and economics have interlocking effects. It is aimed at reducing unemployment by offering new vocational education opportunities to people whose joblessness comes from lack of education and skill training.

It opens the door to equality of educational opportunity for all citizens without regard for age or academic background, but with an overriding regard for their right to obtain training and education that will enable them to become economically self-supporting. It is concerned with boys and girls in secondary schools and those who have completed high school and need continuing or specialized vocational education; it recognizes the needs of the academically handicapped, the socially and economically

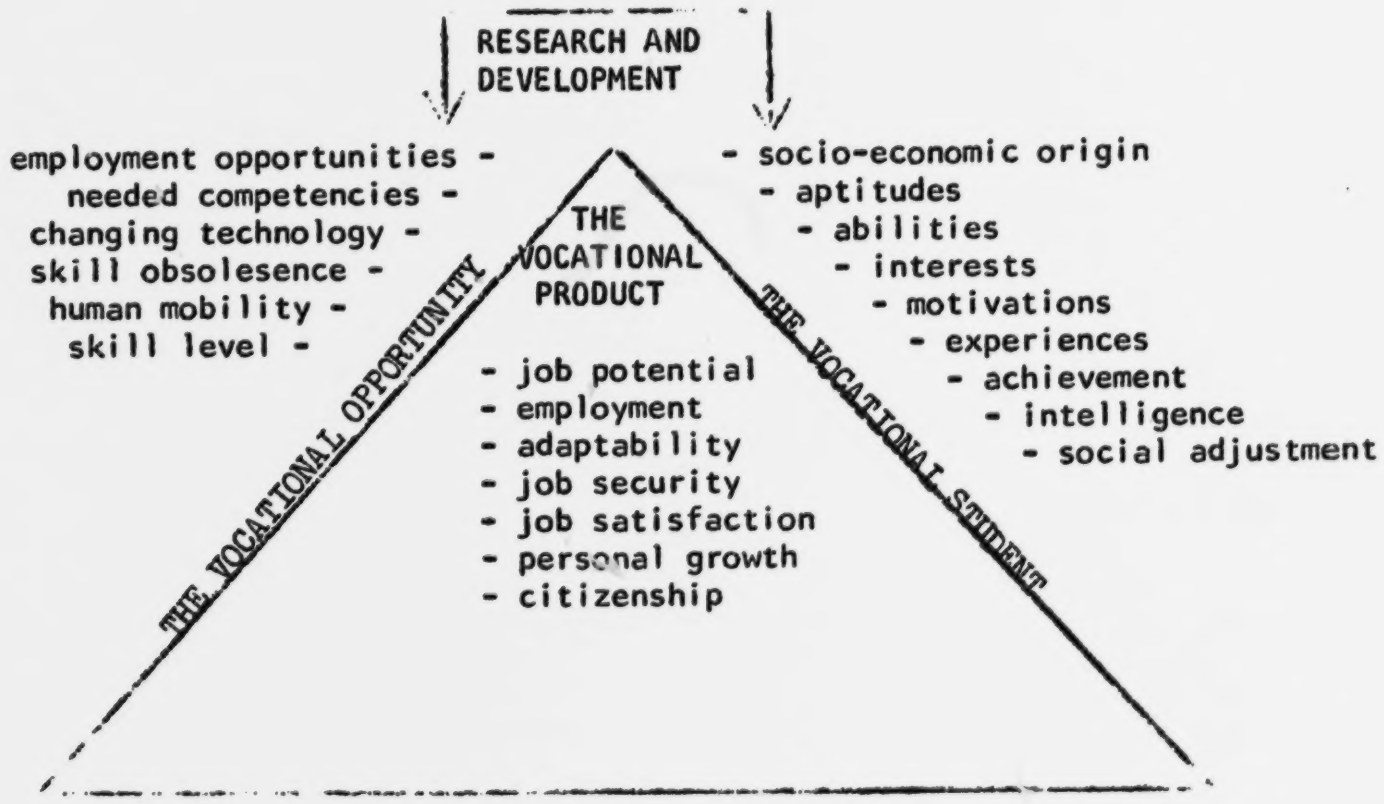
deprived, the technologically displaced; and it reaches equally to the slow learner and to the technically talented, providing vocational counseling and guidance for all.

Specifically, it allows Federal funds to be used for vocational and technical training in any fields that reflect the changing world of work; it provides funds to assist States to maintain, extend and improve existing programs and to develop new programs of vocational education; it authorizes the use of funds for construction of area vocational-technical schools; it provides for experimental residential vocational schools; it authorizes allowances for students who need money to stay in school; it supports teacher training and curriculum development; and it encourages and makes specific provision for research and experimentation.

The Act calls for nationwide cooperation on a scale never before realized. National, State, and community leaders from labor, business and the professions and agency representatives of the Federal, State and local governments are called upon to work with vocational educators in assessing and planning programs to meet the job needs in all communities. It demands that vocational education be recognized as a vital and integral segment of our educational system that must be integrated into the main stream of a total educational effort.

The expectations implicit in this new charter for vocational education demand expanded, broadened and intensified programs.

II. AN EXPANDED DESIGN



The triangle above indicates the importance of research and development as a catalyst for an expanded design of vocational education. The three sides of the triangle represent the major components of occupational education; the vocational opportunity, the vocational student and the vocational school system. The effectiveness of vocational programs is measured, in the final analysis, by the graduates ability to perform successfully in our technological society. Research and development are imperative in this process.

III. AN IMPERATIVE RESEARCH CAPABILITY

Almost half a century of vocational education as we have come to know it in our time verified the need for research activity in all parts and all levels of the total occupational education program. If occupational education has come of age, research must permeate all aspects of its planning, operation, organization, administration, and evaluation. Lacking the contribution of meaningful research, occupational education will play, at best, an important hit-and-miss function in the lives and welfare of few citizens. Any operating program which does not delegate an adequate portion of its funds for research and development can only proceed as does a blind animal. The purposes of the vocational acts, which charge Federal and State agencies with "promotion" and "further development" of vocational education, require research to give direction to this promotion and development.

It is suggested that the particular role of research is to make more realistic and opportune the contribution of vocational-technical (occupational) education by the reduction of the lag between the conditions which influence the program, and the educational program itself.

Research is sorely needed in this area to identify vocational opportunities, individual needs for training, limitations of programs and people and adequacy of provisions. Insight, understanding, and application have become persistent values and objectives at the expense of the diminishing emphasis on needed manipulative skills and related information. In recognizing that the new technology has just begun to unfold, it is of great importance that occupational education research of high validity be maintained to give appropriate direction in our programs and in our country's technical and scientific development.

Because of the change in the nature of our occupational complex, the general dimensions of our traditional skill index are no longer realistic. The total educational problem involves the task of reorientating, re-equipping, and rehabilitating an individual with more than new skills and knowledge and transplanting him to a new work situation. Research is needed not only in the techniques and curriculums of training and re-training; it is evident that educational planners must learn and implement new knowledge of worker motivation, inhibitions to relocation, social and cultural values, and other factors inherent in this situation.

Vocational education to serve adequately the needs of the vocational students, who are persons of all ages in all communities, will require expanded research programs on which to base programs of education. Such research will investigate the affect of socio-economic origins on readiness for learning; interests and motivations; experience; and social adjustment.

Special emphasis must be placed on vocational programs that will provide adequate training opportunities for the socio-economic disadvantages of youth. These youth generally are not ready for, nor can they adjust successfully to, the regular vocational training programs. New and different techniques are essential if under-privileged, culturally deprived youth are to succeed in vocational training. It is anticipated

that such youth will require expanded and continuing individualized counseling; job adjustment, social adjustment, basic education, and other special services designed to meet their specific needs.

Research is imperative throughout the various aspects of the vocational school system to insure a program of high quality geared to the change in a technological society and which will meet the needs of each individual student who enrolls. Valid criteria for teacher selection are needed, as well as experimentation in preparing teachers who are competent in working with all types of students in motivating them to a high achievement level which is evidenced from performance on the job. What should be the content of the curriculums for preparing various types of workers, needs study. Findings from research are important in identifying the competencies needed by all workers, and how they may be developed, as well as selection of the most effective instructional methodology, materials, and evaluative procedures in the teaching-learning process. Research is also needed to define the particular facilities which are essential for developing the deserved competencies and skills, and to give bases for decisions relative to administrative structure and supervisory practices to insure maximum growth of the student.

The following researchable problems have been identified as examples of studies which will contribute to the direction and development of sound vocational education programs. Lists of additional problems compiled for specific occupational training areas are available upon request from members of the Research Committee of the Division of Vocational and Technical Education.

THE VOCATIONAL OPPORTUNITIES

1. What occupations, of different levels, are found in fields such as the following?

   Number of job opportunities and salary levels; kinds of positions and clusters of competencies needed; levels of training needed; facilities needed for training; placement and supervised work experience.

   Maintenance and service occupations in manufacturing establishments, consumer service, etc.

   Agricultural occupations, and occupations directly related to agriculture.

   Medical and Health fields.

   Office Occupations.

   Business fields -- wholesale and retail merchandising, banking, insurance, real estate, etc.

   Welfare agencies and groups which serve the needs of individuals and families.

2. To what extent are women employed in various occupations, and in what capacities? How do their qualifications and their perfor-

mance compare with those of men in similar positions?

3. Competencies needed by the wage-earning homemaker in order to attain a high level of performance on the job and in the home as home manager, mother, wife. Are there competencies common to a high level of performance in both roles?

4. Groupings of occupations by types and levels for purposes of training program development.

5. What levels of competency are required for successful entry and advancement in selected occupations?

6. What are the employment opportunities at different age levels?

7. Factors affecting disposition of people to move if job opportunities shift to new localities.

8. What are the opportunities for entrepreneurship in small businesses and industry?

9. A study of elements common to the spectrum of occupational objectives.

THE VOCATIONAL STUDENT

1. Most alienated, vocationally handicapped, and culturally deprived individuals are slow learners. What kinds of training programs should be provided for these people?

   a. What occupations and kinds of jobs can they do?

   b. How can above training methods be determined?

   c. What are the identifiable personal and social background characteristics of these groups?

   d. What changes do the above undergo as they progress from happy first-graders to dissatisfied, unhappy sixth graders?

   e. Studies designed to determine the aptitude and interests of today's young people with little academic persuasion.

   f. What technique can be used to motivate these youths to want to take a job?

2. What is the relative effectiveness of different programs of vocational preparation for disadvantaged youth?

3. To what extent does a youth's self concept limit development of his potential? What kind of an educational program will improve a youth's self concept?

4. How can we identify the potential level of achievement of a student in a given occupational area?

5. Factors affecting motivation of the student to enable him to perform at his highest potential.

6. Characteristics of the older worker which seem to influence satisfactory adjustment to retraining and job replacement.

7. What special abilities are identifiable with probable success in various non-professional occupations as compared with those required for professional occupations?

8. Determining the amount of experience, background, and training needed by individuals planning to enter certain occupations.

9. Approaches which might be made to girls and women to raise their aspiration level and to plan realistically for dual responsibility in gainful employment and as homemakers.

THE VOCATIONAL SCHOOL PROGRAM

1. Studies designed to give new and improved methods, techniques, and procedures for establishing new programs of vocational education.

2. Studies designed to determine the competencies needed by teachers, supervisors and administrators of vocational education. We need to know the critical competencies of teachers. We also need to know competencies that may be common to the different vocational education fields.

3. Studies that will identify the basic concepts and principles taught in the various vocational instructional programs. This would enable curriculum builders to identify basic concepts and principles common to two or more instructional programs.

4. Studies to determine the communicative effectiveness of teaching materials and to investigate methods of increasing the teaching effectiveness of these materials.

5. Studies designed to determine the kinds of relationship that may exist between the school drop-out problem and the organization of the curriculum in a comprehensive high school. Is there a positive correlation between the percentage of drop-outs and a curriculum organized into tracks (e.g., college preparatory, vocational education, and general)?

6. Studies designed to determine the relation of school characteristics to vocational outcomes.

7. Studies designed to assist in the articulation of high school vocational programs with post high school programs.

8. Studies designed to evaluate methods of organizing, administering, and supervising programs of vocational education.

9. How to most effectively handle individual differences of students in the classroom

--utilization of principles of learning
--effect of group pressure
--utilization of sociological findings

10. To what extent does vocational education in high school tend to hold high school students?

11. What facilities and equipment are necessary to prepare persons to enter and advance in various occupations?

12. Effective uses of programed instruction, television, and other media in teaching in vocational education.

13. Teacher Education; Recruitment of teachers; salaries of teachers; competencies needed by teachers of present and expanded programs.

14. Studies to determine the advantages and disadvantages of supervised work experience (cooperative training) in the training of individuals for various occupations.

EVALUATION OF VOCATIONAL EDUCATION PROGRAMS

1. Studies designed to evaluate the products of vocational education programs in relation to their objectives.

2. Studies designed to determine citizenship values occurring to students from vocational education programs.

3. Economic relationships between benefits of vocational education and the costs involved.

4. Instruments to measure:

   a. Effectiveness of course instruction on changed behavior of students.

   b. Prediction of teacher's ability to bring about desired behavior changes in students.

   c. Cultural and ethnic empathy with persons from different social, cultural and economic backgrounds.

5. Study the most effective ways a data processing system could be used in an annual follow-up study of graduates.

6. An evaluation of the occupational and professional competence of vocational instructors.

7. Criteria for evaluating and recording student progress in the various occupational areas.

8. Evaluation of the effectiveness of guidance and counseling programs in helping youth to select the occupation most in line with their potential.

9. What are the occupational "ladders" to various levels of responsibility in employment?

10. What criteria should be used to evaluate the effectiveness of: post-high school programs; adult programs?

11. Relationships between the economic contribution of the homemaker who works outside the home in relation to the welfare of her family and her own satisfaction.

12. To what extent does the vocational education program serve the needs of youth and adults and the needs of society?

Second General Session

Earl H. Knebel, Texas, Presiding
Walter, Labay, Texas, Recorder

Morris S. Wallace, Education and Philosophy Department Head at Texas Technological College discussed "Needed Research in Education".

Lewis Eggenberger, Texas, presented the findings of his doctoral dissertation, "An Analysis of High School Vocational Agriculture from Evaluations of Graduates in the Panhandle-Plains Area of Texas.

George O'Kelley, Georgia, presented the research findings of "The Farming Practices of Former Vocational Agriculture and Non-Vocational Agriculture Students in Selected Georgia Counties".

The conference participants toured the Lubbock Vocational Agriculture School Farm Facilities.

NEEDED RESEARCH IN EDUCATION

Morris S. Wallace
Education and Philosophy Department Head
Texas Technological College

Because of its scope, the subject of Needed Research in Education, which was my own suggestion, confronts me with no alternative but to organize it into a manageable structure for discussion. So much research is not being done that is needed, and so much is being done that is not needed, that organization is mandatory. This presentation, therefore, has been organized around Needed Research in some seven or eight categories in education, ranging from curriculum to school-public relations. In addition, emphasis will be placed, in a separate category, on Some Research That Is Not Needed in Education. This latter subject I will enjoy discussing with you very much, which will become obvious in the presentation.

NEEDED RESEARCH IN EDUCATION

1. Curriculum
   a. A functional versus a general or liberal arts curriculum.
   b. Academic vs. Vocational and Technical
   c. A multi-track program
   d. Ungraded school
   e. Mass vs. individualized education
   f. What should the school program accomplish
   g. Implications in an imbalanced school curriculum
   h. Curriculum modification
   i. Grading marking progress and achievement
   j. Reporting to parents
   k. Dropouts
   l. Testing
   m. Guidance and Counseling
2. Teaching
   a. What is effective teaching?
   b. What constitutes an adequate teacher preparation program?
   c. How can effective in-service education programs be developed?

d. What kinds of institutions should be allowed to prepare teachers?

e. How can an adequate supply of qualified teachers be attracted and retained in teaching?

f. What qualitative rather than quantitative standards should be applied to institutional accreditation in teacher education?

g. How effective are the new media in teaching?

h. What about team teaching?

3. Learning

a. How does the human organism learn as distinct from animals or seals?

b. What insights have been derived from the psychology laboratories that have relevance to teaching and learning?

c. How does motivation and interest affect learning, both in rate and comprehension?

d. How do individuals differ in aptitude and ability to learn?

e. What are the implications in differences in ability to learn for grading, pupil promotion and retention.

f. How is learning ability related to intelligence? To dropouts?

4. Administration

a. The decisioning process, who, what, how, why?

b. Control of education at all levels.

c. Financing education at all levels.

d. The proper relationship between Local, State, and Federal agencies.

e. The qualifications, representativeness, motives, tenure, duties and responsibilities of board members. (Local & State)

f. Administrative communication to staff, public, and State agencies, including the Legislature.

g. What is a defensible size of a school district, educationally and economically.

h. Should school officials, board members, County and State officers, be appointed or elected?

i. How can the responsibilities for schools be shared by the professional and lay public without yielding to vested interests?

5. Educational Finance

a. The relationships between cost and quality in education.

b. A professional teaching salary.

c. Critical analysis of current and static economic indexes as basis for foundation support.

d. The ratio of local to state support of public education.

e. The ratio of a local district's effort to its ability to support schools.

f. The ability and effort of a state to support schools.

g. The rehabilitation of the property tax as a basis for local school revenue.

h. New sources of tax revenue for education at all levels.

6. School-Community Relations (Public)

a. How to keep control and responsibility close to people without losing it to vested interest groups that do not represent the people. (Civic, religious, business, tax payers, professional)

b. Pressure Groups - including parents with unsound aspirations for children - how this affects performances.

c. Public Opinion Research
   1. How to measure and evaluate public opinion.

   2. How to educate public opinion.

   3. Propaganda and public opinion.

   4. Public opinion sampling.

d. How to develop public understanding and expectancy of education.

Some Research in Education We Do Not Need (We have too much now)

1. The Conant type - teacher education

2. The Koerner type - eliminate all teacher education institutions

3. Observational - a tour to expert type

4. The Admiral type - by telephone

5. Conformation type - Council in Basic Education

6. Affirmation type - Ford Foundation

7. Bias projections - First cousin to all above

8. Best practices - whatever someone is doing - if enough are doing it - it is good.

In 1961, 125,000,000 standardized tests were given - Archibald Shaw - August, 1961 - Overview

108,000,000 - purchased by schools in 1958-59 - Education Encyclopedia

Testing movement inspired by public opinion.

Why the testing boom?

What purposes?

How interpreted?

What affect on curriculum and instructional methods?

Is testing consuming too much teaching time and energies of pupil and staff?

Are financial expenditures justified?

Is the over-emphasis having good or deleterious affect on pupils emotional stability, mental health?

Do the tests measure what they purport to measure?

AN ANALYSIS OF HIGH SCHOOL VOCATIONAL AGRICULTURE FROM EVALUATIONS OF GRADUATES IN THE PANHANDLE-PLAINS AREA OF TEXAS

Lewis Eggenberger
Teacher Educator
Texas Technological College

(A forty-seven page research publication is available from the Agricultural Education Department)

The objectives of this study were to determine the present occupational status of West Texas high school graduates of 1953, 1954 and 1955 who had completed one or more years of vocational agriculture. Other objectives were to determine factors related to occupational choices of graduates; to evaluate the high school course areas and the vocational agriculture programs as related to the occupations of the graduates; and to determine possible changes that could be made in vocational agriculture in order to meet the needs of male high school graduates.

The data used in this study were secured from the permanent records of 45 high schools and from completed questionnaires obtained from 846 graduates. The number of students represented 70.4 percent of the graduates whose addresses were available.

Twenty-eight and four-tenths percent (240) of the graduates were farm operators, 15.7 percent (133) were employed in farm-related occupations, 59.5 percent (419) had entered nonagricultural occupations, and 6.4 percent (54) were in the military services.

The following factors were related to the occupational choices of the graduates at the one-percent level of significance when tested by use of the chi-square statistical method: occupation of the father, acres of land operated by the father while the son was in high school, years of vocational agriculture completed by the high school graduate, and the graduate's subsequent attendance at college. The scholastic rank of the high school graduate was significant at the five-percent level. The relation of size of high school attended and the occupational choice of the graduate was not significant.

Approximately three fifths of the 846 graduates had attended college. One half of those who had attended college had received a degree.

The graduates, not classified by occupation, rated the high school course areas in the following descending order: mathematics, English, business and bookkeeping, speech, vocational agriculture, science, industrial arts, typing, and foreign language. The farm operators rated vocational agriculture second and those graduates in farm-related occupations rated it fourth.

The farm operators rated the eight subject-matter units in vocational agriculture in the following descending order: crop production, farm management, farm mechanics, livestock production, soils, agricultural occupations, FFA leadership activities, and horticulture. The graduates in farm-related occupations rated soils and FFA leadership activities higher than did the farm operators.

The supervised farming program was rated "important" to the farm operators and those in farm-related occupations but of "little importance" to those in nonagricultural occupations.

Graduates who were in farm-related occupations or were farm operators received the most value from their FFA training indicating its value as "important". The graduates in the three occupational groups who participated in FFA leadership contests rated the training as "important" in their present occupations.

The graduates who were farm operators and who were in farm-related occupations rated the value of agricultural judging contests considerably higher than did those graduates in nonagricultural occupations. Graduates who were farm operators had greater participation and received more value from training received in fitting and showing livestock than did the other groups.

THE FARMING PRACTICES OF FORMER VOCATIONAL AGRICULTURE AND NON-VOCATIONAL AGRICULTURE STUDENTS IN SELECTED GEORGIA COUNTIES

George O'Kelley
Teacher Education
University of Georgia

The Problem

The study was designed to compare farmers who had been and those who had not been enrolled in high school vocational agriculture classes in terms of the number of approved agricultural practices reported in operation in their farm businesses.

The specific null hypotheses to be tested were as follows:

1. There is no significant difference between farmers in the vocational agriculture group and those in the non-vocational agriculture group in terms of their adoption of certain approved practices in their farm enterprises.
2. There is no significant difference between farmers in the vocational agriculture group and those in the non-vocational agriculture group in terms of the adoption of the total number of individual approved practices as a composite for each enterprise studied.
3. There is no significant difference between farmers in the vocational agriculture group and those in the non-vocational agriculture group in terms of the number of approved practices completed for all livestock and crop enterprises in a composite comparison.

An interpretation of the findings supports the following observations:

1. There was a significant difference at the .01 level between farmers in the vocational agriculture group and farmers in the non-vocational agriculture group in terms of the number of records kept in their farm businesses with the difference favoring the vocational agriculture group.
2. There was a significant difference at the .01 level between the vocational agriculture group and the non-vocational agriculture group of farmers in terms of the number of approved practices adopted in the swine enterprises with the difference favoring the vocational agriculture group.
3. There was a significant difference at the .01 level between the vocational agriculture group and the non-vocational agriculture group in terms of the number of approved practices adopted in the beef cattle enterprise with the difference favoring the vocational agriculture group.
4. There was a significant difference at the .01 level between the vocational agriculture group and the non-vocational agriculture group in terms of the number of approved practices adopted in the corn enterprise with the difference favoring the vocational agriculture group.
5. Farmers in the vocational agriculture group used significantly, at the .01 level, more approved peanut practices than did farmers in the non-vocational agriculture group.

6. A significant difference at the .01 level was found between the vocational agriculture and non-vocational agriculture groups in terms of the number of approved practices adopted in the cotton enterprise with the difference favoring the vocational agriculture group.

7. Farmers in the vocational agriculture group reported the adoption of significantly, at the .01 level, more approved practices than did farmers in the non-vocational agriculture group, using a composite of all practices listed for the small grain, dairy cattle, egg, vegetable, pecan, broiler, and peach production enterprises group.

8. Farmers reporting vocational agriculture in high school reported the adoption of significantly, at the .01 level, more total approved practices when all livestock enterprise and crop enterprise practices were combined in one chi-square calculation than did farmers in the non-vocational agriculture group.

9. It would appear that farmers reporting vocational agriculture in high school adopted significantly more approved practices than did farmers without such experience but it should be pointed out before further generalizations are made that such factors as age and kind of education--both general and agricultural--received by the respondents were not held constant in this analysis.

Third General Session

Lawrence W. Drabick, North Carolina, Presiding
W. M. Mahoney, South Carolina, Recorder

Fred D. Rigby, Dean of the Graduate School, Texas Technological College presented a talk on "The Financial Structure for Conducting Research".

J. G. Bryant, Georgia, discussed the "State Structure for Conducting Research". He stated that a State Agricultural Education Research Committee had been appointed. A core committee is composed of a teacher educator as chairman, the State Supervisor, an Assistant Supervisor, and a vocational agriculture teacher. This committee can be enlarged by adding vocational agriculture teachers and school administrators. The agricultural education supervisory and teacher education staffs act as a consulting committee to the State Agricultural Education Research Committee.

The State Agricultural Education Committee cooperates with the newly appointed Director of Research for the division of Vocational Education. The director coordinates the research for the entire vocational education division, and is housed at the University of Georgia where facilities are available.

H. T. Lester, Jr., Georgia, discussed the Departmental Structure for Conducting Research.

Everett D. Edington, Oklahoma, presented the findings of a study of "The Effect of Selected Characteristics of Trainees in Farm Mechanics Retraining Schools Under the Area Redevelopment Act in Oklahoma".

Roy W. Roberts, Arkansas, presented the findings of research on the "Factors Associated With Success of Adult Education in Vocational Agriculture in Arkansas". This presentation was a summary of a dissertation completed by R. B. Flood for the Degree of Doctor of Education at the University of Arkansas, January, 1964.

THE FINANCIAL STRUCTURE FOR CONDUCTING RESEARCH

Fred D. Rigby
Dean of Graduate School
Texas Technological College

The title "Financial Structure for Conducting Research" has an imposing sound which might seem to imply that the speaker is some kind of fiscal expert. This is not the case and what I propose to talk about is more modestly described by some such expression as "Where and How to Get Money for Research". This is something I do know about, within limits, of course, by virtue of long experience in a Federal agency which supports research.

Where should one look for research support money? The off-hand answer to this is: look where such money is known to be available and look hardest where the most money is. However, money sources are distinguishable by means of properties other than the amounts they disburse. A first classification is: public versus private. Within each of these, three types of source may be distinguished. For public sources these are Federal, State and Local government agencies. For private sources, they are individuals, foundations, and industries. I do not intend to say much about individuals or about local governments as sources of research funds, because I do not know much about them. Some of you are certainly better informed in this area. I shall make some remarks about the others.

The "how much is available" criterion obviously points to Federal agencies as most promising sources, and, perhaps to private foundations as next in line. There are a great many private foundations which will make research grants and I do not know of any directory of them. In general, they limit the subject matter areas of interest to them, but do not impose severely limiting conditions otherwise. The larger ones publicize their fields of interest widely. The smaller ones do not, and it becomes the problem of the individual researcher to learn about them and select those likely to be interested in his research.

Industry is not, by and large, a good source of research support money for outsiders. Industries inclined toward research tend to pay their own employees to do it and to ask Federal agencies for the money to pay them with. This comment, however, is a statistical generalization which cannot be relied upon in detail. As you all know, industries do make grants or contracts for research to be done at universities - more in some fields than in others. Sometimes there is a tendency to impose controls on what is done with results, or to seek advertising advantage in unacceptable ways. Given due alertness on such points, industrial sources of research money may be quite satisfactory.

State governments do supply money for support of research, either by specific project or by generalized appropriation to State institutions. The State of Texas does both, and Texas Tech has received such funds in both ways. Amounts tend to be modest. Texas determines the amounts appropriated for this purpose with the help of a formula which I had a hand in constructing. The point I want to make in this connection is that this formula contains a term whose magnitude is directly propor-

tional to the amount of outside research support a State institution gets, usually from the Federal Government. (I did not propose the inclusion of that term, I hasten to say, but I did not oppose it either, for it is a measure of research interest and competence, even if not a very good one.) In Texas, currently at least, State appropriated funds for research are quite limited and must cover all fields, particularly those which are not generously supported federally. No State supported university in Texas should rely to a major extent on this source for support of research in the more scientific fields because the amounts which it yields are insufficient and not intended to be adequate. I suppose this is true in other States too.

This brings me to the Federal Agencies, of which there are a good many which support research. Each one has its own mission, which usually limits the subject matter areas in which it operates. That word "usually" can be replaced by "always". The agency with broadest scope, so far as I know, is the National Science Foundation and it is limited to "science", even though a fairly broad interpretation of science is used. Popular folklore would have it that the military agencies should have the narrowest scopes, but in fact they do not. They fall in the middle of this range or near the broad end because their interests cover virtually all of science and the special military topics as well. In an agricultural field, I suppose the Department of Agriculture contains the most promising sources of research support funds. However, there are others and I mention as an example, the Agency for International Development, known as AID. It is well known that AID gives money to other nations, but not so well known that it makes grants or contracts for research by U. S. institutions on topics related to development in underdeveloped nations.

The Federal Agencies impose no uncomfortable controls on researchers they support unless the subject matter has a security classification, and most subject areas do not. Of course reports are required, but a research man who is not willing to report on his work is shirking his obligation to society anyway. Unpublished research is incomplete. Usually, publication in a reputable journal meets Federal reporting requirements except for simple, informal status or progress reports. To be sure, there are fiscal reports, but these are the responsibility of business offices, not of individual researchers. Popular folklore has it that grants are superior to contracts for basic research. If this is true, the advantage of the grant goes to the business office rather than to the research man. I do not think it is true at all. I participated in a contract research program in the Office of Naval Research, and consider contracts, as used there, superior except in a limited number of special circumstances.

So much for where to seek research funds, Now, how about the way to ask for them? Most of the supporting agencies prefer to deal with institutions rather than with individuals, because they find skilled administrators facing them there. Whether it is justified or not, the legal and business people feel that individuals are sometimes irresponsible. Even the least restrictive grant program has its legal and business aspects, so this preference for institutions is simply a fact of life which must be faced. You may have noticed that institutions do not care to have their employees act as free agents in search of research

funds to agny great extent either. Even individuals often prefer to deal with an agency through their own institutions--it takes care of retirement contributions, for example.

The vehicle for requesting research funds is, therefore, the research proposal made to a source, usually by the institution which employs the researcher. This proposal is originated by the prospective researcher, but is reviewed copiously by others at his institution, which must be sure it is not offering to commit itself unwisely, and at the agency to which it is submitted. Agency practices differ at this stage also. There are two conceivable extremes. In one, the agency's own staff does all of the reviewing and evaluation, making the decision to accept or reject without external aid. In the other, the agency delegates this function to review panels of outside experts and always takes their advice, so long as the money holds out. No agency that I know of uses either of these extreme methods. Each uses some mixtures of the two, some nearer one extreme and some nearer the other. There are some that always secure an external review, but do not invariably accept its results. There are some that resort to external review only when no staff member is expert in the field and do have expert staff members in most fields of agency interest. The latter are likely to be more enterprising when faced with proposals which are interdisciplinary or otherwise off the beaten track. The review panel mechanism is inherently conservative. It is probably so that every research supporting agency screens proposals before subjecting them to review and evaluation and knocks some of them out at this stage. Crackpots send in proposals, not through universities of course, but there are other kinds of institutions in the game too, and not all of them are very discriminating.

What should go into a proposal? Obviously not a guarantee of results specified in advance. This is research being discussed, not manufacturing. Nevertheless, the agency wants to come as close to a guarantee that significant results will be forthcoming as it possibly can. You may have noticed that people who handle other people's money tend to be very conservative about it. Somebody up the line is watching them to make sure they are not wasteful. (Popular folklore again may say that this is not true in the Federal Government, but if it does it is wrong.) No research supporting agency is in the business just to give away money. Results are wanted even though it is recognized that they cannot be made certain of in advance and that it may be a long time before the relative value of research results to society can be determined. The individual program manager in an agency wants his program to show distinguished results. It is not only good for his career, but he can always see opportunities to make wise use of more money than he has at his disposal and he will not continue to have his budget increased unless he gets results--not necessarily always from every project he supports, but from his program, which is an aggregate of many projects.

Therefore, a proposal should contain the following: a good concise statement of the research for which support is sought; a description of the intended approach; a discussion of past and current research by others on closely related topics; evidence of the researcher's own competence; and the proposed project budget.

It is probably true that evidence of research competence is the most important of these when it comes to acceptance or rejection, assuming that the agency does have money in hand. This is because demonstrated competence is the best guarantee of results. If the proposer has a world-wide reputation in his field, he is a good bet. If he is unknown and cannot point to some publications or to having worked effectively with someone who is known, he does not have much of a chance, unless he has chosen one of the very few programs designed to help beginning researchers. Even in that case, he must rely upon recommendations from others. However promising a project, no program manager or reviewer is going to approve without reason to think it will be competently handled.

If the proposer has reason to think that his prospective results will be especially valuable to the agency by virtue of its mission, he will do well to point this out -- indirectly perhaps, by reference to the likely applicability of his work. In the more mission oriented agencies, the program managers have to point up values of this kind when they exist and can use any help they get. This not to be interpreted as saying that to get support from a military agency one must show direct military applicability. The Army, Navy and Air Force programs, in pure mathematics, would never have reached first base if that were true.

The budget must be complete and detailed. The institution business office will see to this anyway, but is more gracious about it if consulted in advance. The amount asked for should be the amount needed. When the source is a Federal Agency, there is no size which has a better chance than any other size, except that very large projects are not very numerous. The average size is about twenty to thirty thousand dollars a year. This pays for somewhat less than one full time equivalent researcher plus supporting costs. Budget items for supplies, equipment, travel, clerical help, and report preparation or publication costs are normal. Overhead and related items are also. The main thing about the budget is that it should be consistant with the scope of the research. Program managers and reviewers know how much research costs in their fields and will cut back excessive requests. Some of them will sometimes volunteer more money than is asked, but this is rare. Requests for support for more than a year can be made. Some agencies give such support as a usual thing. Some approve for more than a year, but provide funds for a year at a time, and some nearly always approve, if at all, for only a year at a time. The reason for this usually is a lack of large enough appropriations to do otherwise. All research supporting agencies recognize the desirability of continuity and advance planning but their abilities to provide for them vary and so do their techniques. A research contract may run ten years, renewed annually, sometimes a year or more in advance of actual expenditures. A grant may or may not be renewable. Some projects survive for long periods under different grants or contracts, and perhaps with slowly changing subject matter emphasis also.

This has been a rather casual discussion of where and how to get funds in support of research. It has not pretended to give a complete picture. It has emphasized some aspects of the topic more than others, because the speaker feels more at home with them.

A STRUCTURE FOR CONDUCTING RESEARCH

Herschel T. Lester, Jr.
Director of Research for
Vocational Education
University of Georgia

These are challenging days for all people who administer or conduct research and it appears to me that we are truly beginning an era when research in vocational education is to become a respected part of the total program.

Vocational Research, in many States, has not been accepted due to many factors, such as: (1) lack of interest, (2) lack of funds, and (3) lack of understanding, to name only a few. These factors have contributed to research being undertaken in most instances on an individual vocational service basis. Individuals who conducted research did so after completing a full supervisory or teaching load with little encouragement or adjustment in responsibilities. In short, research was postponed until all other duties were completed and due to this haphazard approach, many vocational people have little respect for research.

Another approach has been to complete graduate studies dealing with a large problem on a small scale using poor procedures to meet specific requirements of a graduate school or in some instances, a professor. Most of these shortcomings may be overcome by providing adequate financing for graduate students while conducting their studies. Very little coordination of graduate studies between vocational education services has been attempted and, in too many cases, no coordinating has been done between professors within their own departments. These types of graduate studies have many times reached unjustified conclusions.

Studies in some cases have been undertaken to "prove" certain philosophical procedures, personal biases in regard to certain phases of programs, and others have found personal, foregone conclusions. These types of studies often found funds, personnel, and time; however, how much we learned from these studies has not justified the expenditures.

Needs in Research

If I can interpret correctly, research is not just a survey, a graduate problem, a thesis or dissertation, or a staff study of a small area, even though in the past we used this procedure to provide us with woefully inadequate data. Research, to me, is a procedure or method which people may use as an attempt to investigate beyond where we are at present in areas which few have ever visioned in their thinking, and none have planned for in their programs. It includes the unknown, the new, the unexplored, charting a destiny for vocational education, and in many cases, a study of our "holy golden bovines"!

Planned research efforts will not happen. On the contrary, it will require untiring leadership efforts of State staffs and teacher educators to develop this phase of vocational education. Several things must be done before research programs may be undertaken and some of these may be outlined as follows:

(1) Administrators must be convinced of the value of planned research.
(2) Personnel must be adequately trained in techniques.
(3) Personnel must be willing to conduct research.
(4) Adequate permanent funds must be made available.

To meet the situation now developing in vocational education, we must establish planned research programs to lead the way in developing educational programs. If we are not to fall behind in the race of progress and quality education, we cannot, in the future, rely on trial and error. Instead, we must make planned educational changes discovered by adequate research programs.

Plans for the Future

We, in Georgia, do not have answers for the questions raised in the two preceding sections; however, we are trying to establish a procedure for the establishment of a planned research program. Briefly, this procedure may be outlined as follows:

(1) Establish a procedure whereby one person may coordinate all research undertaken in vocational education.

Duties of the individual would be as follows:

(a) Consultant with research personnel or interested people in planning, designing, and carrying out research projects.
(b) Collect and disseminate information on research procedure.
(c) Collect and disseminate research publications.
(d) Secure approval for undertaking projects.
(e) Secure funds for carrying out studies.
(f) Accept completed projects.

(2) Establish a State Research Committee to review all proposals and to establish finding priorities for submitted proposals.

This committee is made up of the following individuals:

(a) One teacher educator from each vocational service.
(b) One supervisor from each vocational service.
(c) State Director for Vocational Education
(d) Dean of the College.
(e) Director of Research.

(3) The State Committee is to point out significant research problems and assign responsibilities for making the studies.

Other duties of the State Committee will be to:

(a) Plan a comprehensive, long-range State research program.
(b) Provide means for acquainting teachers, administrators, and others with pertinent research findings.
(c) Involve research specialists and consultants in other fields.
(d) Establish needs for additional qualified research personnel.

It should be pointed out that this procedure is based upon the premise that a permanent research budget will be established. Without this budget, qualified personnel to draft proposals and direct studies will be hard to procure. In addition, without a permanent budget qualified graduate students cannot be recruited who are capable of conducting quality studies over an extended period of time.

(4) Establish individual research committees by services similar to the AVA research committees. These committees are to be made up of teachers and other selected people and will assist in pointing out the problem areas.

SUMMARY

We do not have the answers on how to establish a planned research program; however, we are experimenting with a procedure which might give us assistance in this direction. I am sure other States in the past have used these same sililar procedures with varying results. This is our beginning of an organized research program, and we hope to learn from this experiment that we may graduate into more advanced ways and into better procedures. With our procedures, we hope to (1) give an organized approach to research, (2) establish who will do the research, regardless of vocational service or non-vocational field or combination, (3) provide direction, guidance, and a consultant in preparing research proposals, and (4) establish permanent funds to be used in addition to grants. In the final analysis, our research program has only one objective; that is to search for, find, and apply the soundest educational program which we are capable of developing.

If you have any suggestions, we will be most happy to listen and to incorporate them in our procedure.

A STUDY OF THE EFFECT OF SELECTED CHARACTERISTICS OF TRAINEES IN FARM MECHANICS RETRAINING SCHOOLS UNDER THE AREA REDEVELOPMENT ACT IN OKLAHOMA

Everett D. Edington
Teacher Educator
Oklahoma State University

The Area Redevelopment Act of 1961 (Public Law 87-27, May 1, 1961) was passed by Congress to help certain areas of the country, which were suffering from substantial and persistent unemployment, to plan and finance their economic redevelopment. Part of this Act provided funds for the training of unemployed and underemployed residents of these areas. During the Spring of 1962, six Farm Mechanics training schools were held in Oklahoma under the Area Redevelopment Act, and ten Farm Mechanics training schools were completed under this Act in Oklahoma during the spring of 1963. There were 255 men who received training in these 16 schools.

Since the Manpower Development and Training Act (Public Law 87-415, March 15, 1962, as amended by Public Law 88-214, December 13, 1963) continues with 100 percent reimbursement until June 30, 1965, other training schools similar to the ones being studied are being held and planned in Oklahoma.

The problem for which this study was designed was to determine whether there was any relationship between the test scores on the general aptitude test battery and selected characteristics used in selection of the trainees and their success in gaining employment in training related occupations.

In this study of Farm Mechanics training programs in Oklahoma, an attempt was made to determine whether there was any difference among the following groups in aptitude test scores and certain characteristics. These groups were as follows: (1) Those who received training and are now employed in a training related occupation; (2) Those who dropped out and are now employed, but not in training related occupations; (3) Those who completed the training and are now employed, but not in training related occupations; (4) Those who dropped out and are now unemployed; (5) Those who completed the training and are now unemployed.

Trainees for these programs were screened and selected by the local office personnel of the Oklahoma Employment Security Commission. Federal funds were supplied through the U.S. Department of Health, Education and Welfare to pay for the training.

The Oklahoma Employment Security Commission gave all the enrolees the General Aptitude Test Battery, Form B-1002 (GATB), which was developed for use in the occupational counseling program of the United States Employment Service and includes measures for nine different aptitudes. For purposes of this study all nine of the aptitudes were used. In addition, the intelligence, spatial aptitude, and finger dexterity aptitudes were considered collectively because those are the three that the Employment Security Commission considered in selecting enrollees.

At the end of each training course completed in 1963, the State Board for Vocational Education required each local instructor to complete an "Individual Trainee Termination of Training" form on each trainee. On this form, each instructor was required to rate each trainee according to eight different personal traits. The traits are: industry and energy, relations with others, emotional stability, leadership, appearance, ability to learn, dependability, and punctuality.

Other information obtained from the Individual Trainee Termination of Training form was: (1) the amount of training that each enrolee received; (2) if he dropped out, and the reason for dropping out. For the six courses which did not have this form, the information was acquired from the local supervisor.

The results show Spatial Aptitude was the only single aptitude which was significantly different among the different groups. The combination of intelligence, finger dexterity and spatial aptitude which was used by the Employment Service for selection was also significant at the five percent level.

In studying other characteristics of the trainers the following was found to be true: (1) Those in related occupations were slightly older than the others; (2) A larger percentage of the employed groups were married, while the unemployed groups had larger numbers either single or divorced; and (3) Those employed in training related occupations had less education than the others.

The supervisors of each class rated the trainees on the following: (1) industry and energy; (2) relations with others; (3) emotional stability, and leadership; (4) appearance; (5) ability to learn; and (6) dependability.

The employed men were rated higher in industry and energy, appearance and ability to learn.

Eighty-seven percent of the enrollees contacted are now employed at some job, while 61 percent are employed in training rated occupations. That placement record alone indicates that the selection and instruction of trainees was successful. A majority of the trainees who got a job after taking the training got a pay raise over their last regular salary before training.

FACTORS ASSOCIATED WITH SUCCESS OF ADULT EDUCATION IN VOCATIONAL AGRICULTURE IN ARKANSAS 1/

Roy W. Roberts, Head
Department of Vocational Teacher Education
University of Arkansas

The major purposes of this study were to determine factors which seem to be associated with success in adult farmer education and formulate recommendations that have implications for further development of programs in adult education in Arkansas. The study involved an analysis of selected aspects of adult farmer programs conducted by teachers of vocational agriculture in Arkansas during the school year 1961-62, a statistical study of selected factors affecting the success of adult classes, an analysis of opinions of teachers of vocational agriculture relevant to factors found to be significantly associated with success of adult classes, and the formulation of guidelines for further development of adult farmer education in Arkansas.

FINDINGS

An analysis of the reports for 545 adult farmer classes conducted by 260 teachers of vocational agriculture in Arkansas during the school year 1961-62 showed that teachers developed courses of study for the classes based on eight areas of subject matter. A total of 7,652 farmers enrolled in the classes, with an average enrollment of 14 persons and an average attendance of 79 percent. The largest number of classes began during July, and nearly two-thirds of the classes extended over a period of six months. Ninety-two percent of the farmers enrolled planned improved farming practices as a result of the instruction. There was a negligible relationship, correlation coefficient of .019, between enrollments in day school classes and enrollments in adult farmer classes in schools represented in the study.

Sustained attendance and average number of improved farming practices planned by members enrolled were assumed to be adequate criteria for ascertaining success in adult farmer classes. On this assumption, null hypotheses were tested based on 25 selected factors for each of the criteria. The null hypotheses were tested by statistical techniques employed in analysis of variance and those factors rejected at .05 and .01 levels of significance were subjected to Duncan's Multiple Range Test to ascertain items most significantly related to the factors involved.

Fifteen factors pertaining to attendance were found to be significant at the .01 level, five factors were significant at the .05 level, and five factors were found to be not associated with attendance. The following factors were significantly associated with average attendance at evening classes:

1/ An abstract of a dissertation submitted in partial fulfillment of requirements for the Degree of Doctor of Education by R. B. Flood, University of Arkansas, January 1964.

1. Attendance was higher in classes dealing with farm management, general shop, general agriculture and welding; and lower with course titles such as community problems, field crops, and horticultural crops.
2. Classes held in the evening (7 p.m. and later) were better attended than classes held at other times of day.
3. Regular teachers of vocational agriculture were more effective in maintaining attendance than special instructors.
4. Class attendance averaged higher where responsibility for leadership was assumed by the teacher of vocational agriculture.
5. The lecture-demonstration and conference methods were more effective in maintaining attendance.
6. Attendance averaged higher when meetings were held in the vocational agriculture classroom or shop.
7. Average attendance was significantly higher in classes in which one or two home visits were made by the vocational agriculture teacher.
8. Parallel classes in home economics for women did not improve average attendance of men in adult classes.
9. The average attendance in adult classes was somewhat higher when experienced teachers were in charge of the class.
10. There was little relationship between day-school class enrollment and average attendance in evening classes, although day-school class enrollments ranging from 30 to 89 resulted in higher average attendance at evening classes.
11. Significantly higher average attendance occurred in adult classes in schools where the teacher of vocational agriculture was scheduled for five class periods per day.

Other significant factors were educational level of class members, farming status, age of class members and salary of the teacher. The following factors showed no significant influence on average attendance at adult classes: geographical farming area, month in which class begins, length of classes, day of week class meets and number of class periods prorated during school day.

Eight factors pertaining to the number of improved farming practices planned by farmers were found to be significant at the .01 level and five factors were found to be significant at the .05 level. Twelve factors were not significantly related to the number of practices planned by class members. Some of the significant factors were time of day class meets, type of class organization, number class periods teacher is assigned during the school day, place of class meetings, educational level of class members, age of class members, farming status of class members, and tenure of teacher. Among the factors that did not significantly influence the number of approved practices were: geographical farming area, month in which class began, type of class, length of class, day of week class met, frequency of class meetings, method of determining course of study, method of financing the class, class participation in cooperative activity, experience of teacher, enrollment in day-school class and number of class periods prorated during the school day.

The following seven factors were related to both class attendance and number of farming practices at the .01 level of significance: time of day class meets, type of class organization, place of class meeting, educational level of class members, farming status of class members and salary of teacher.

A survey of opinions of teachers of vocational agriculture in Arkansas indicated general agreement among teachers that attendance and improved practices were affected by the foregoing factors.

The following recommendations were among those suggested by the author of this dissertation:

1. The teacher of vocational agriculture should be responsible for the organization and conduct of the program of adult farmer education in a school community, although special instructors may be employed to assist with certain courses.
2. Teachers should select methods of teaching applicable to the type of material presented and to the age of the group. Emphasis on demonstration and conference procedure is essential.
3. The course content in adult farmer classes and the method of teaching should be geared to the educational level and the farming status of the group involved.
4. Although various types of class organization may be involved, teacher leadership must be exhibited in the organization and conduct of adult farmer classes.
5. Teachers of vocational agriculture should undertake a comprehensive program of adult farmer education early in their tenure in a school community and early in their career as teachers.
6. Adult farmer education should be an integral part of vocational agriculture and teachers should schedule sufficient time during the school day to devote to planning and follow-up of adult classes.
7. Finances for the adult education program in vocational agriculture should be an integral part of the total school budget.

Fourth General Session

R. W. Montgomery, Alabama, Presiding
Vannoy Stewart, Texas, Recorder

Charlie Curtis, Louisiana, discussed an "Off-the-Farm Agricultural Occupations Survey in Louisiana", conducted by the Agricultural Education Department.

Richard Morrison, Eli Lilly Company, Indiana, presented the findings of his doctoral dissertation, "Educational Needs for Agricultural Occupations in a Selected Area of Louisiana".

John H. Rogers, South Carolina, discussed research conducted in the department on "Identifying Needed Competencies and Employment Opportunities in Agricultural Occupations". He emphasized that the job opportunities and salaries within each agricultural business could be obtained by using a single page questionnaire or postal card. The competencies required for each job could be obtained by interviewing a small representative sample of the firms studied. In addition, experts, or specialists are used to formulate a program designed to train the prospective employees.

The conference participants toured the Plains Cotton Cooperative Marketing Association. The participants saw how cotton was classified and how data processing equipment could be used in an agricultural business.

OFF-THE-FARM AGRICULTURAL OCCUPATIONS SURVEY IN LOUISIANA

Charlie Curtis
Teacher Educator
Louisiana State University

For the past six months, the Agricultural Education Department at Louisiana State University has been engaged in a state-wide survey of off-the-farm agricultural occupations. The ground work for this survey actually began about three years ago when the vocational agriculture teachers in Louisiana began to study their programs in the light of changes that needed to be made so that the instructional needs of the youth could be met. It was determined that a basic course of study should be written -- a course of study that would afford a good broad education in agriculture for the group of boys bound for the farm, for the group bound for college and the agriculture professions, and the group that seek employment in the various businesses of the community that were agriculturally oriented.

Under the leadership of Mr. C. P. McVea, Director of Agricultural Education, and Dr. C. L. Mondart, Sr., Director of the School of Vocational Education at Louisiana State University, the teachers of the State were divided into committees and assigned various areas of the program to work on. When the committees had completed their work, joint report meetings were called. The reports were presented, approved, edited, and printed for distribution to all teachers. Every teacher in the State had an assignment and was thoroughly familiar with the work throughout the project.

During this time it was realized that a State-wide survey of off-the-farm agricultural occupations would have to be made before we would be able to move forward in this area. Louisiana State University indicated that they would supply the personnel, if a source of funds could be found. The Louisiana Vocational Agriculture Teachers Association, realizing the great need for this survey, petitioned the State Board of Liquidation of the State Debt for funds. This petition was most favorably received and funds alloted to Louisiana State University for the survey.

The funds were received by the University in November, 1963. A staff member of the Agricultural Education Department was assigned as Coordinator of the project, and preparation was made to launch the project.

Plans for the survey were written up, stating the following objectives:

1. To identify present and emerging agricultural occupations other than farming and ranching for which instructions in vocational agriculture should be available.
2. To determine present numbers of employees in these occupations and job titles.
3. To estimate the annual turnover and entry opportunities in these occupations and job titles.
4. To determine competencies needed for entry and advancement in these occupations.

5. To determine other characteristics of these occupations, such as salary, age of entry, labor laws, and union regulations, required formal education and experience, licensing and certification.

6. To supply basic data needed to provide agricultural training at the high school and college levels for off-the-farm occupations available to rural boys in Louisiana.

Procedure

It was determined that the personal interview method of collecting data would be used in conducting the survey. A tentative schedule was developed and presented to an advisory committee and was approved. A final schedule was developed after the return of staff members attending the National Coordinating Conference held at the National Center last January. At this time, the Baton Rouge area was selected as a pilot center and a date was set to begin the survey.

The amount of money granted made it possible to hire enumerators rather than use vocational agriculture teachers in the various areas. A training manual was written, and the decision to hire enumerators in each city and train them rather than use the original group throughout the State was made. Assistance in recruiting enumerators was sought from the State Division of Employment Security. They agreed to recruit the people we needed and also furnish office space, training space, and telephone service for the project supervisors.

Before a survey can be made, a list of agricultural related firms for each area must be secured. This is quite a problem, and many sources were used before our list of firms were complete. Lists were developed from the following sources:

1. Files of the State Division of Employment Security.
2. List provided by the State Department of Agriculture.. . .
3. Lists provided by Chamber of Commerce.
4. Telephone Directories.

Before we actually went into an area to launch a survey, the Chamber or Chambers of Commerce were contacted and the project thoroughly explained to their Board and Agricultural Committee. This was done so that the Chamber would sent out a letter endorsing the project, and also assist us in completing our list of firms. In all cases, the Chambers of Commerce sent letters endorsing our project. They also wrote newspaper articles and arranged television and radio programs. While we were working with the Chamber of Commerce, the Division of Employment Security was recruiting our enumerators. As far as we are concerned, it would be impossible to conduct a survey of this type without the cooperation of the Chamber of Commerce and the Division of Employment Security. After the enumerators were hired, they participated in a three-day training program. Enumerators were supplied with their part of a complete list of agricultural firms within the survey area. One hundred percent of the firms within a given area, was the goal of the survey.

The Louisiana study was divided into three (3) phases. Phase number one dealt with concerns located in the seven metropolitan areas of Louisiana: Baton Rouge, Alexandria, Shreveport, Lafayette, Lake Charles, Monroe, and New Orleans. We have completed the interviews in these areas

and have started compiling for the report. Phase number two will cover firms located in the concentrated rural areas. Phase number three will cover compiling job classifications and descriptions, in addition to developing pilot centers and courses of study for each area. We need this information to determine how to extend training in vocational agriculture to provide for the needs and interests of students who plan to enter agricultural service occupations.

The Baton Rouge survey was started on January 21, 1964. Mr. Richard G. Morrison, a candidate for the Doctor of Philosophy Degree, was assigned to the project. Mr. Morrison was to use the survey as his doctoral dissertation. He will present a summary of his findings in a few minutes.

The Baton Rouge Survey was our proving ground. Many mistakes were made, but we made progress, and the way was paved for the State-wide study.

I would be amiss at this time if I did not mention the part that Dr. C.L. Mondart, Sr., Director of the School of Vocational Education at Louisiana State University, has played in this survey. It was largely through his efforts that the grant was received. He has worked untiringly with the Chambers of Commerce and the Division of Employment Security in each city. The entire staff of the Department of Agricultural Education has assisted in the training programs and in supervising the enumerators.

I would also like to say that we have had most favorable cooperation from the businesses that have participated in the survey. From the beginning until the present time, we have had very few refusals. Most of the firms are eager to participate and are happy we are conducting the survey. They are awaiting the final report.

EDUCATIONAL NEEDS FOR AGRICULTURAL OCCUPATIONS IN A SELECTED AREA OF LOUISIANA

Richard G. Morrison
Eli Lilly and Company

Agriculture has always been the basic industry of America. Even in the 1960's, with the continuing increase in population, it is quite evident that agriculture is truly the basic and fundamental industry of this country.

As one who has spent several years studying agriculture per se, and who has devoted several hours to basic agricultural research related to agricultural economics, agricultural education and numerous aspects of agri-business, and who is presently employed by an actual agriculturally oriented company, Elanco International department of Eli Lilly and Company, I thank you for giving me the honor of participating in this conference.

Even though I have migrated north, I am just as proud as Dr. Curtis that Louisiana has made a contribution toward a better understanding of agri-business, or, as phrased by most of us, "off-the-farm agricultural occupations". This accomplishment has been achieved through the devoted leadership of Drs. Mondart and Curtis and other faculty members at LSU, as well as several leaders in the State Department of Education and numerous others connected with the total agri-business complex in Louisiana.

Because all of us are familiar with the accelerated changes taking place in agriculture, and the affects these changes have had and will continue to have on agricultural education, my remarks will be limited to my doctoral dissertation. Several of you have indicated a desire to review this study, so we will consider the entire manuscript.

This was a pilot study. It was the first attempt at determining training needs and occupational opportunities for students of vocational agriculture in Louisiana. The establishment of guide lines for future studies of a similar nature was also a major objective. With these objectives in mind, I chose to entitle the study Development and Application of Techniques and Procedures for Determining Training Needs and Occupational Opportunities for Students of Vocational Agriculture within the Baton Rouge Agricultural Business Complex.

There are six chapters in the manuscript: the Introduction, Review of Related Literature, Analysis and Interpretation of Data, Techniques and Procedures for Conducting an Off-The-Farm Agriculture Occupations Survey, Summary and Conclusions, and Recommendations.

Since most of you are familiar with the logical sequence of a doctoral dissertation, you may wonder why I am omitting the abstract. Since it includes a very brief summary of the results of the study, I would like to refer to it at the close of my remarks.

The introduction includes background information, specific objectives and basic assumptions of the study, and a review of agricultural legislation in the United States.

The purpose and objectives of the study were outlined by those of us at LSU, and then reviewed at a meeting which was attended by Dr. Neilsen from Washington, D.C., and several members of the Agricultural Economics, Agricultural Education, Rural Sociology, and other departments at LSU. It was generally agreed that there were numerous employment opportunities for youth and adults in non-farm agricultural occupations, but no specific data of this type was available in Louisiana. It was felt, too, that information of this kind was needed to counsel high school and college students desiring employment in the vast agri-business complex.

It was finally decided that the purpose of this study would be twofold: first, to develop techniques and procedures to follow in determining the non-farm occupational opportunities that exist in Louisiana; and second, to apply these techniques and procedures in the Baton Rouge metropolitan area to determine the prevailing agricultural occupational opportunities, and formulate guide lines and procedures for the subsequent study of the total agri-business complex in Louisiana.

The specific objectives of this study were:

1. To determine techniques and procedures for evaluating the type and scope of the agri-business complex existing in any community.
2. To determine techniques and procedures for estimating employment opportunities in non-farm agricultural occupations for both high school graduates and those with more extensive education in agriculture.
3. To develop interview techniques and a suggested schedule (questionnaire) to be used in the state-wide study of non-farm agricultural occupations. These interview techniques and the suggested schedule can also be used by high school vocational agriculture teachers in subsequent years to determine their local non-farm agricultural occupation opportunities.
4. To undertake an actual case study of the Baton Rouge metropolitan area following the suggested techniques and procedures, and, using the suggested schedule in order to identify present agricultural occupations for which training in vocational agricultural education is desirable, to determine: (1) the present number of employees in non-farm agricultural occupations, (2) the skills and knowledge required for entry and satisfactory performance in these occupations. (3) the other characteristics of the non-farm agricultural occupations, such as salary, minimum age for entry, union restrictions, labor laws, required experience, formal education, etc., (4) the continuing educational needs of employees in various related occupations.

I felt that the attainment of these broad and quite specific objectives in both the pilot study of the Baton Rouge metropolitan area and the state-wide study would ultimately be analyzed to obtain the following:

1. Job descriptions.
2. Job clusters by training categories.
3. Course outlines and curricula.
4. Adjustments in the State's current program of vocational agricultural education.

These four objectives constitute the next phase of Dr. Curtis' study in Louisiana.

Most of our objectives are quite similar to those which guided studies in several other States, because I felt that so much effort has been put to

this task by numerous outstanding leaders, that we should profit by their experience. Frankly, I think we must share our work and be willing to accept the work of others if we are to move ahead at a rapid pace in our agricultural educational efforts.

Chapter I also includes a definition of terms, a discussion of the limitations of the study (the Baton Rouge agri-business complex) and the methodology of the study.

One of the first problems encountered was obtaining a complete list of all the agri-business in Baton Rouge. Sources used for this purpose were: the State Employment Security Office, the yellow pages of the local telephone directory, and the Baton Rouge Chamber of Commerce. All addresses were ultimately obtained from the telephone directory. To those of you who may undertake a similar study, I recommend that you save time by going directly to the yellow pages of a local telephone directory, since it generally includes a complete list of all agri-businesses.

We obtained an original list of approximately 200 agri-businesses in Baton Rouge. After going through the list and eliminating a few firms that were either out of business or borderline farm-based occupations, the list was finally reduced to 152. All of these firms were visited either by muself or by another interviewer. The owner, manager, or the best qualified employee of each business was interviewed in all cases. A schedule (questionnaire) similar to those being used in approximately thirty-eight other States was used in this study, with a few minor revisions.

When I made reference to the "other interviewers" who helped obtain the information in this study, I noticed some of you perk up your ears. Louisiana has been fortunate and somewhat unique in that we received a sizable grant to finance this study. Consequently, to expedite the study, we hired professional interviewers to help collect the data. In Baton Rouge, for example, we interviewed 14 prospective interviewers, and hired six. Believe it or not, every one we hired was a woman. At first we had some apprehension as to whether or not they would be suitable for a survey of this nature, but following two days of thorough training in interview techniques and procedure, they did a marvelous job of collecting data. In fact, they gained entrance to some establishments which others on the staff might not have been able to enter.

In most phases of the study, several techniques and procedures were followed. For example, on collecting and analyzing the data several methods were tried. This was done so that the best procedures could be determined for subsequent use in the state-wide study. In fact, Chapter IV, which is a discussion of the most feasible method of duplicating this study, was included for this purpose and for use by high school vocational agriculture teachers in their local areas.

Chapter II, following standard protocol, is a review of related literature.

A rather lengthy analysis and interpretation of the data collected in the Baton Rouge study is included in Chapter III. The first part of this

chapter is a discussion of the total population by major occupational families. Most of you will recall from our discussions in Ohio last winter that we decided upon eight major occupational families which would be included in all studies subsequently undertaken. For my purpose, I chose to include the first seven. This does not mean that the eighth major occupational family (Professional Agricultural Workers) has been excluded from the state-wide figures. This major category is being analyzed in a separate sudy by another graduate student of LSU.

This table, entitled the "Total Number of Firms, Respondents, Job Titles, and Employees by Major Occupational Families and Levels of Employment, Baton Rouge, Louisiana - 1964", is one of several included in Chapter III (See appendix). Here, we have further broken down the major occupational families into various levels of employment. Every table is of similar type construction; that is, all data is analyzed according to specific job titles within major occupational families. Notice that there is a total of 152 firms and 152 respondents, meaning a 100% sample. There were 225 job titles within these firms representing 2,811 employees.

Table II shows the number and percent of firms within each major occupational family that do a certain percent of business with the agricultural complex. (See Appendix) That is, from this table we can summarize how much of a firm's business is agriculturally oriented. For example, notice that the livestock and poultry industry occupations have the largest percentage of firms in the 91 to 100 percentage interval, whereas the larger percentage of farm machinery sales and service firms in Baton Rouge is with the industrial complex instead of the agricultural complex. Conversely, at least 90% of the businesses are 100% agriculturally oriented in the Baton Rouge livestock and poultry industry.

Here we see the major occupational families in the Baton Rouge agri-business complex and a grouping of the types of firms that fall under each occupational family.

I trust by now you have noticed that Louisiana has attempted to keep in line with the discussions we had at the conferences in Ohio. At these meetings we outlined for each occupational family specific tables which most of us believed to be of major importance. Data for each of the seven occupational families are analyzed in seven long and comprehensive tables, for a total of forty-nine tables. We will only analyze the first seven which are found under the heading of livestock and poultry industry occupations.* Rest assured, however, that similar tables and appropriate discussions are found under all major occupational families.

Table III shows sub-areas of training in agricultural business management and marketing associated with the livestock and poultry industry occupations. Under each sub-area of training there are three columns, headed N, D, and NN (Necessary, Desirable, Not Necessary). Only one of these headings could be checked for any given question during this part of the actual interview. Thus, it is possible to say for every job title, according to a certain number of respondents, that it is either necessary,

*These tables were not included in this summary.

desirable, or not necessary to have training in a particular agricultural competency.

With regard to Table III, several of the livestock and poultry industry occupation employees need training in agricultural business management and marketing, particularly the managerial and supervisory employees. Conversely, most respondents felt that it was not necessary for employees at other levels of employment to have this type of training.

Training in agricultural mechanics and automation generally is not considered necessary for most employees in the livestock and poultry industry occupations. This is understandable considering the types of firms within this occupational family. A few laborers, however, do need training in farm-shop, farm-power and machinery.

A thorough analysis of Table V indicates that several employees in most job titles in livestock and poultry occupations need training in animal science, whereas it is considered only desirable in many other cases. Once again, it is the managerial and supervisory employees who need formal training of this nature.

Within the Baton Rouge livestock and poultry industry occupations, there is little necessity for the employees to have intensive training in the various plant sciences, according to Table VI. A few respondents felt that it was desirable to have specific knowledge of certain sub-areas of plant science, but in general this area of training was not too important for employees in livestock and poultry businesses.

The preceding four tables contain the various agricultural competencies that were found to be needed by employees in the livestock and poultry industry occupations. The tables are rather lengthy, and for the most part, full of very valuable information. The next step, of course, is to reduce the job titles into aggregate job clusters and to combine the areas of agricultural training as much as possible. This was not my responsibility. This next step will be up to Dr. Curtis, Dr. Mondart and the other leaders in Louisiana's agricultural education system. I know these people have given this considerable thought, and they have already started this phase of the state-wide study.

We also set up tables to include data regarding the educational requirements for employees in each major occupational family. According to Table VII it is almost impossible to gain entry into one of the livestock and poultry industry occupations without a high school education. Several managerial, supervisory, and sales job titles require a minimum of a Bachelor of Science degree, usually obtained from an agricultural college.

Continuing education is often required of employees in order to advance within the Baton Rouge livestock and poultry industry occupations. Respondents indicated that "on-the-job" training or "business or industry" training were the most widely used methods of continued education, according to Table VIII. Business or industry training refers to various short courses or intensive in-service training courses held within the industry or within an individual firm.

Employee residential background requirements were also analyzed for each major occupational family. In Table IX we notice that little emphasis is placed on an individual's residential background when being selected for entry into a Baton Rouge livestock and poultry industry occupation. Most respondents have no preference regarding residential background.

With regard to age statistics, both minimum and maximum age limits were obtained for entry into all job titles in each major occupational family. The present age of employees was also obtained. It is interesting to notice that within the Baton Rouge livestock and poultry industry, most employees are under forty years of age. Most respondents indicated they would consider filling every job title with qualified people who were over forty years of age and, in most cases, over fifty years of age. This indicates that very few restrictions are placed on the age of employees in this major occupational family.

I think we all agree that a very important criterion to consider when seeking employment is salary. Of course, this would include the beginning and potential (maximum) salary. Data in Table XI reveal averages of the present earnings of employees in the Baton Rouge livestock and poultry industry occupations, as well as beginning and maximum salary data for all job titles. Present salaries in this occupational family range between $400 to over $700 per month for the managerial through clerical job titles.

At this point we have thoroughly exhausted all the available data regarding the livestock and poultry industry occupations. The next major occupational family discussed is ornamental horticulture. Once again, the four major areas of agricultural training were analyzed, advancing on to the educational requirements and terminating with salary. This approach was followed for the remaining six major occupational families as well.

The average age of Baton Rouge agri-business employees is between thirty and forty. The average monthly salary is approximately $600 to $700 for professional, technical, managerial, and supervisory employees and between $200 to $400 for clerical, sales, skilled, and semi-skilled workers.

A high school education is required for employees in the Baton Rouge agri-businesses with the exception of a few semi-skilled and unskilled workers. College degrees are desirable for several employees, particularly those at managerial, professional, technical, and clerical job levels. Most employees must pursue on-the-job training in order to advance within their job titles. Respondents often indicated that many of their employees were attending in-service industry short courses or pursuing advanced degrees in agricultural colleges in order to move ahead.

Information from this study, condensed into tabular form and included with the state-wide data will be subsequently used in curriculum revision and development at both the high school and college levels. The data should also be of tremendous value in publishing agricultural guidance literature.

Very briefly, these are our findings from the pilot phase of the state-wide study concerned with the agri-business occupational opportunities and needs in Louisiana. Of course, the total data that will be collected

from the state-wide study will have more significance than what we have here. This study simply sets the stage for the remainder of the state-wide study.

Since this is a doctoral dissertation and a pilot study as well, the following recommendations for the further development of the high school vocational agriculture program in Louisiana have been advanced:

1. Every agri-business in all major metropolitan areas of Louisiana should be surveyed following similar methods and techniques used in the Baton Rouge study. Dr. Curtis informs me that this has been done, and that the data is now being analyzed. Next, smaller urban centers should be surveyed on the same basis as the larger metropolitan areas, preferably by local vocational agriculture teachers according to the techniques and procedures that are outlined in Chapter IV.

2. Data from the metropolitan areas should be combined into aggregate state-wide tables similar to those tables found in Chapter III. These state-wide data should be analyzed and reduced to job clusters by training categories so it will be easier to utilize when developing course outlines and curricula. New programs for high school vocational agriculture should be developed in keeping with the results of the survey. Cooperative efforts on the part of the College of Agriculture at Louisiana State University, The State Department of Education and high school vocational agriculture teachers must be achieved in order to fulfill this objective.

3. A publication should be provided every high school vocational agriculture teacher informing him of the Baton Rouge study, type of data collected, methods of analysis, and the manner in which this study can be duplicated in a school community. Every high school vocational agriculture teacher should then be urged to undertake a survey of his community in order to better familiarize himself with the existing agricultural related occupations and off-the-farm agricultural job opportunities which are available to his students. Then, he should gear appropriate phases of his program in the direction of the results of the survey.

4. The results of the state-wide study should be further analyzed and developed into agricultural guidance literature and distributed to every superintendent, principal, guidance counselor, and vocational agriculture teacher in Louisiana.

In concluding my remarks on my dissertation, I would like to add that plans are being formulated for subsequent action regarding every recommendation I have proposed. It is obvious that the agricultural educators in Louisiana are not standing still.

Now from the standpoint of an actual agri-business representative, let me say that our company has a tremendous interest in the future of the agricultural education system in the United States, as well as the entire world. We have been quite cognizant of the revolutionary changes in agriculture, and, furthermore, we must stay abreast of these changes. We hire new employees almost every day who must have had both intensive and extensive training in some phase of agriculture. They are specialists (experts) in a specific area of agriculture. I trust that you will keep in mind all agricultural-related businesses such as ours and the entire agricultural complex of our nation as you forge ahead in the development

of your respective educational programs. I might add that our services are always available to you if you desire them.

In closing, please do not forget the farmer, and the adequate training of his replacement. True, I have advocated change, where change is necessary. Nevertheless, I do feel that every program should be evaluated on an individual basis to determine if change is really necessary. Remember, the farmer is <u>still</u> the backbone of our society.

Fifth General Session

Robert R. Price, Oklahoma, Presiding

W. M. Mahoney, South Carolina, discussed the implementation of Pilot Programs in South Carolina.

Gerald W. Thomas, Dean of the School of Agriculture, Texas Technological College, presented a paper entitled "Cool Front Hits South -- Forecasts Incomplete".

James Pirkey, High School Principal at Littlefield, Texas discussed the "Vocational Agriculture Program Needed to Meet the Present Needs of Students". He emphasized that a need existed to implement a pilot program in vocational agricultural supervised employment experience in agricultural businesses. Of 29 agricultural businesses surveyed, 26 businessmen would be willing to cooperate with the Littlefield High School Vocational Agriculture Department in supervised employment experience. The businessmen of these 29 agricultural businesses were expecting to hire 45 additional employees within the next two years.

Roy W. Roberts, Arkansas, discussed the "Core Program in Vocational Agriculture in Arkansas".

Robert Taylor, Ohio, summarized the conference by challenging the participants to return to their respective States to further develop their research programs to help implement new programs in vocational education.

The location and date of the next Southern Regional Research Conference was discussed. Vannoy Stewart, Texas, moved that the Southern Regional Research Conference in Agricultural Education be held at the National Center for Advanced Study and Research at Ohio State University in 1965. The motion was seconded. John Rogers, South Carolina, moved to amend the motion by adding the words "and to be held at North Carolina State College in 1966". The amendment was seconded. The amended motion was voted on, and carried.

The participants at the conference recommended that one-half day should be provided at the National meeting in Ohio in 1965 so the future plans and business of the Southern Regional Research Conference could be discussed and conducted.

Representatives from the following States stated they <u>could not</u> attend the Research Conference in 1965 during the week of:-

July 25 - None
August 8 - Oklahoma
August 15 - South Carolina
August 22 - South Carolina

It was moved that the meeting adjourn. The motion carried.

POLICIES AND PROCEDURES GOVERNING POST HIGH SCHOOL TRAINING IN VOCATIONAL AGRICULTURE

W. M. Mahoney
District Vocational Agriculture Supervisor
South, Carolina

Objectives of Post High School Training:
The broad objectives of post high school training in vocational agriculture is to provide courses of instruction and practical training for out-of-school youth that will fit them for employment in agricultural occupations.

More specific objectives are:

1. To provide courses of instruction and practical training for out-of-school young men that will prepare them for employment on farms as managers, herdsmen, mechanics, and in other farm business operations requiring special training and skills.
2. To provide courses of instruction and practical training for out-of-school youth that will prepare them to accept employment in agricultural occupations other than farming, such as farm supply and farm machinery businesses, plant nurseries, agricultural processing plants, farmer cooperatives, farmers markets, etc.
3. To provide courses of instruction and practical training that will assist youth and adults employed in agricultural occupations to improve their abilities and skills and advance in their respective areas of work.

Need for Training:
Before a post high school course can be approved, it must be determined that there is a definite need for trained persons in the field of work concerned. This should be determined by surveys, studies and other appropriate means.

Opportunity for Employment:
Training for post high youth cannot be approved unless reasonable assurance can be given that students successfully completing the course will be able to secure employment in the occupational field for which they have been trained. Agricultural businesses should be contacted concerning this before course is approved.

Training Requirements:

Course of Study:
Courses of study should be planned in detail to include the amount of theoretical and practical training that will adequately prepare the students to perform the skills and carry out the functions and responsibilities of the job for which he is being trained.

Length of Course:
The length of a course will be determined by the amount of subject matter to be taught and the practical training to be offered. Emphasis should be placed on thoroughness of training.

Class Schedule:
Classes should be scheduled at a time during the day when students can attend without interruptions. Class periods should not be less than three (3) hours in length. Schedules should be arranged to provide from 8 to 16 hours of instruction per week.

Size of Class:
Enrollment in classes will be determined by the type of course being offered. No class should have an enrollment less than 10 students. Enrollment in farm mechanics and plant nursery courses should not exceed 16 students.

Who May Enroll in Courses:
Courses are designed primarily for post high school youth between the ages of 17 and 25, preferably high school graduates. Non-high school graduates will be accepted provided they have sufficient education, ability and aptitude to satisfactorily complete the course and perform the occupational duties for which they are trained. In exceptional cases, 12th grade students may be enrolled, provided the course will not interfere with the regular high school studies being pursued by the student. Each student should be screened and approved by the teacher of agriculture and the high school principal or superintendent. Minors must have the permission of parents or guardian. Students who are already employed and are taking the course to improve their ability and skills should have the support and approval of their employees.

Who Will Provide the Instruction:
A special teacher with appropriate training and experience in the course-field will be employed to teach. A person with some college training and teaching experience is preferred.

Responsibility of Regular Teacher of Agriculture:
It will be the responsibility of the regular teacher of agriculture to determine need for training, possibilities for employment, organize the course, enroll students, secure special teacher, keep necessary records, make reports and provide overall supervision throughout the duration of the course.

Where Courses Will be Conducted:
Insofar as possible, courses of instruction should be conducted in the Vocational Agriculture Department.

Placement of Trainees:

Equipment for Courses:

Consumable Supplies:

Other Costs:

Certificates to be Awarded:

Reimbursement of Expenditures:
Schools will pay monthly salary of special teacher. Schools will be reimbursed by State Department of Education upon completion of course. Equip-

ment will be purchased and paid for by schools. Schools will be reimbursed for the full cost of equipment by State Department upon receipt of paid invoices. Consumable supplies will be handled same as equipment.

Laboratory Fee for Students:
$5.00 per course.

NOTE: Policies, procedures, and course outline for a post high school course in Ornamental Horticulture; and Operation, Care, and Repair of Farm Tractors has been prepared by the Agricultural Education Department of Clemson College and the State Department of Education, Columbia, South Carolina.

COOL FRONT HITS SOUTH--FORECASTS INCOMPLETED

"Implementing Research"

Gerald W. Thomas
Dean of Agriculture
Texas Technological College

The subject of this paper is not the weather, but College Youth--Youth, the "cool" generation--descinding upon the schools of the South in unprecedented numbers--truly a cool front and, to a large extent, a surprise to the area because our forecasts were incomplete. I do not mean that we did not anticipate the number of students, but rather I mean that we know little of the nature of these young people--their background, qualifications, motivations, and ultimate career performance. Furthermore, our lack of research information has hampered the development of academic programs and vocational training for these young people.

The so-called "population explosion" is just beginning to have an impact on our systems of higher education. Since we cannot pass a retroactive birth control law, we have no choice but to face this issue. This year over 4 million Americans are attending college. The Department of Health, Education, and Welfare forecasts over 8½ million by 1975. Approximately 40% of all high school graduates now enroll in programs beyond the high school level. Will the agricultural industry get its share of talent and performance from this mass of humanity? This is just one of the many questions confronting us today and focusing attention on the need for conducting and implementing research.

It has been my privilege during the past six months, while on an assignment with the Cooperative State Research Service, USDA, to visit a number of different state universities. Although my major assignment was to review research in the Forage Crops and Range Management Areas, I have taken advantage of this opportunity to talk to many deans, directors, department heads, and faculty members about students and academic programs. Observations and ideas were obtained from States such as California, Nevada, New Mexico, Oklahoma, Missouri, Indiana, Florida, Maryland, Pennsylvania, Colorado, Connecticut, and from various agencies in Washington, D. C.

It seems obvious to me that we are no better prepared than the weather man when it comes to knowledge and predictions about the cool front:

> With super sensitive equipment we can detect chlorinated hydrocarbon insecticide residues in the parts per billion range, and yet, we can't ascertain the academic needs of students.
>
> We know more about balanced rations for livestock than we do about balanced curricula for students.
>
> We can predict plant and animal performance, but we can't predict student performance.
>
> We know the genetic background of grain sorghum down to the 4-dwarf genes, but we know very little about the background of our students and how this affects performance.

We can trace nutrients with radioisotopes through the soil, the plant, and the animal, but for planning purposes we have "lost" most of our students after graduation.

This morning at 7:25 (almost exactly on schedule) many of us heard the impact of Ranger 7. If all goes well, we may have some better pictures of the "sea of clouds" than we have of our own major product of the schools--the student.

My major assignment was to discuss the implementation of research dealing with education in agriculture. This does not mean only "agricultural education" but, rather, all phases and levels of the problem of training people for positions in the dynamic agricultural industry. I will approach this by discussing the following steps which, in my opinion, are a part of the process of implementation:

(1) Stating the problem and objectives--some major issues today.
(2) Seeking support for research--calling attention to the problems.
(3) Summarizing and interpreting the results--the problem of bias.
(4) Circulating research findings--publication of results.
(5) Bringing about change based upon factual evidence.

(1) Stating the problem and objectives--some major issues of concern to the broad field of education in agriculture.

Part of our trouble in implementing research lies in the proper identification of problems. This will influence the experimental design and the approach to the collection of data. It will not be possible to identify very many problems in this presentation. However, to call your attention to a few, as I see them, may help in our understanding of the research process.

(a) The student--numbers and kinds.

There are two ways in which to consider students in the academic picture--first, as numbers (or statistics) and secondly, as distinctly different individuals. I'm afraid too many of us tend toward the consideration of students merely as statistics. Perhaps we are being forced into this.

It is a simple matter to call up the registrar or the auditor and find out exactly how many students we have on campus, or exactly what the student-teacher ratio is in any department. These figures are important--and becoming increasingly more important as more and more institutions and States tie their appropriations to formulas based on numbers or ratios. But, there is an inherent danger in the constant reference to figures--the importance of numbers--the pressure to continually increase student-teacher ratios because of the possibility that, in so doing, teaching salaries can become more competitive or the general appropriation picture can be improved. The increased emphasis on numbers lengthens the gap between teacher and student--decreases the opportunity for discussion. We may be able, with new teaching machines and modern teaching techniques, to relay facts--but the philosophy--which is even more important than the facts--is lost in the shuffle. Einstein once stated that "imagination is more important than knowledge". I'm becoming more and more convinced that he is right. How can we stimulate imagination, explore ideas, give meaning to facts, formulas and statistics with as many as 100 to 500 students in a class?

Although population growth in numbers alone will influence our educational systems, the kinds of people--the nature of the cool front--is even more important. The variation in students is not only the greatest frustration that we face but also the greatest challenge, the greatest opportunity, the greatest hope for the future.

When someone asked one of the alert professors recently how many students we had on campus this year he said, "about 50 percent".

The Saturday Evening Post article entitled, "Youth--The Cool Generation", in describing young people between the ages of 14-22, used such adjectives as indifferent, distressingly bland, mobile, self-assured, vital, violent, and realistic individualists.

We have also been hearing a great deal about pressures toward "conformity" in our young people. The slogan of the day seems to be, "I came, I saw, I concurred". When we talk about indifference and apathy among youth, I'm reminded of the responsibility and example of the older generation. It is difficult to feel much urgency about installing fallout shelters when the builders themselves offer 20 years to pay.

In my visits with leaders in colleges across the nation, I have been alarmed at our lack of factual data relating to students. For the most part, we are operating on outdated impressions or opinions.

(b) Vocational training--where and how?

This is a tremendously large and popular topic of discussion. Sterling McMurrin, former U. S. Commissioner of Education, stated, "I believe that increased emphasis on vocational education is a national need". This idea seems to have permeated the present administration in Washington.

A comment Gardner made in his book on Excellence is worth noting, "We have both plumbers and philosophers and unless we provide quality education for both, neither our pipes nor our ideas will hold water." However, most educators are fighting to keep vocational programs out of the college picture. Who is going to accept this responsibility?

The latest figures show substantial increases in the last few years in the number of students going into Vocational Agriculture programs in high school. Is this trend desirable in the face of: (1) consistent reduction in the number of U.S. farms, (2) increased size and complexity of farm operations, (3) increased emphasis on business on the one hand, and (4) science on the other? Or can we say that we need more Vo-Ag students because we are training for a wider variety of positions in the agricultural industry?

(c) "You-All Come" Vs. Selective Admission to College

In the United States we have made it relatively easy for young people to enter our colleges and universities. "We have scattered colleges so liberally that no student need go far for an education." (Gardner, 1961)[1]. We have lowered the financial barriers through loan funds, student work, etc., in the hope of easing the way for the qualified boy or girl who could not otherwise pay. Academic requirements for entrance to most State colleges, until recently, have been low. In the face of increasing numbers, this

policy is changing and the changes may influence agriculture more than most segments of our economy.

For example, at one of our universities only the upper 12% of the high school students are accepted. With this screening procedure, the majority of eligible students are girls and very few of the boys are interested in agriculture. At the same university, the graduate student population in agriculture consists largely of students transferring from colleges with low entrance requirements or foreign students who have been screened through an entirely different educational process. With a system designed at the lower levels for selective populations, what has happened at the graduate level and what does this say about selective admission?

In another institution, a two-year "terminal" program receives praise because it (1) helps justify a faculty in agriculture, and (2) serves as a recruiting mechanism to get students into the four-year program without initially meeting the over-all university entrance requirements.

Unfortunately, selective college admission will automatically eliminate many rural students from small high schools and in so doing, will reduce the number of potentially good students motivated toward scientific agriculture as a career. What can we do to improve the standards of our rural schools and to make sure that all agriculturally oriented students can compete at all levels of education? If it is in the national interest to guarantee the finest education possible for every person what criteria should be used to determine who should go to college?

(d) Multiple Chances Vs. The "Now or Never" System

Closely akin to the problem of admission requirements is that of our policy of "multiple chances" for success. We hear a lot about the advantages of the European system which gives students a one-shot approach to higher education. Separation of students at the age of 10-11 years on the basis of ability has been praised highly by some educators, and criticized severely by others. Dr. Naylor, (1960)[1], from Duke University stated, "Education in England is valued in a different way than here; a way that delights the 'educator'."

The Washington Post for July 19, 1964 carried an article entitled, "You'd Cheat, Too" dealing with the European system. It seems that, with the future of young Frenchmen between the ages of 17 and 21 riding on the "Bac" and the "Philo"----shortenings for baccaluareate and philosophy exams---any desperate attempt to pass is justified. To be forever prevented from entering any higher level of education would shock most Americans.

It is a unique feature of our system that "late bloomers" may dawdle or occupy their time with other than educational objectives even as late as 2-3 years after they enter college. But, in the hope of salvaging "late bloomers", we have increased the numbers of youngsters with little or no concern to educate themselves. It is easier to go to college, and more pleasant, in many cases, than to accept the alternatives of available work. As a young Californian put it, "The college doesn't pay as well as Lockheed, but the hours are a heck-of-a-lot better", (Gardner, 1961)[2].

There seems to be no doubt that important social benefits have flowed from our multiple-chance policies. But, again, with the pressure of numbers

and the limitations of time and facilities, how long can we continue these practices? Can we incorporate the strong points of the European system into our own policies on higher education?

(e) Specialization Vs. Diversification

The topic here is much broader than the words specialization or diversification might imply. In other words, this is the question of how to obtain a liberal education, and yet be well-trained in a highly specialized scientific field. This dilemma is facing both the high school and college student. At the high school level, often the youngster with his parents and advisor must make a choice between vocational agriculture or physics or a foreign language. At the college level the choice may be even more difficult.

Dr. Henry M. Wriston[1], former President of Brown University, stated that "due to the vast expansion of knowledge and the fact that time limits us from stuffing curricula; we must accept the fact that no individual college graduate can be universally competent.

Robert S. Morison (1961)[3], on the subject of new types of excellence, stated, "I have a very strong conviction that the 'new forms of excellence' required by science over the next half-century will in considerable part consist of techniques for dealing with broader problems, larger problems, problems which arise when a moderate number of small problems are organically inter-related".

We have been great at producing bits of information, fragments of knowledge. We now need to devote more attention to the fitting together of these bits, to the broader inter-relations, and hence to broader utilization.

The question, then, is "How does one set about becoming excellent in a general way?"

(f) What about continuing education?

The Dean of the graduate school at Harvard, Dr. Francis Keppel[2], recently emphasized that "the schools are not expected to produce the educated man, but rather an apt apprentice who has the basic skills and information to become an educated man in his maturity--." He pointed out that the most obvious subjects which open the way to later paths are English (both reading and writing) and mathematics.

Recently, a college president, Dr. R. G. Folsom, dramatically illustrated the need for continuing education programs by stating----"henceforth, engineering diplomas should be printed with a kind of disappearing ink that would become unreadable in about 10 years". Pointing to studies that reveal that the average man works 43 years during his lifetime, Folsom declared "Unless he has engaged in some form of self-education or continuing education, the practicing professional engineer who works this average span will be almost completely outdated for more than half of his working life".

This statement by Dr. Folsom certainly applies to persons seeking opportunities in the dynamic agricultural industry. Consequently, in planning our educational programs, whether they be vocational or academic, provisions should be made for some form of continuing education. Research will be needed to help formulate a program and policy for this important activity.

(2) Seeking support for research

Adequate support for research in the field of education has been a major handicapt. Director C. P. Wilson of Kansas State University stated recently, "Research and education on things in agriculture--soils, plants, animals, machines--is not controversial. Research on people and their institutions and organizations is another matter".

While in Washington, I briefly examined the project files for the State Agricultural Experiment Stations to get an idea of the extent of research support dealing with students. I found less than 25 projects directly relating to education in agriculture. It is, however, encouraging to see an increased concern among the land-grant colleges for their major product--students, and, at least one area, is planning a regional research project dealing with these educational problems.

Many of us feel that over-all Federal funds for research and development along the traditional lines have reached a plateau and that education per se will move to the forefront. The general attitude of the public is favorable. Research support is presently available through many private Foundations, such as Ford and Sears-Roebuck. Present legislation calls for increases in HEW research and Title II of the President's proposed poverty legislation authorized grants for the conduct of research, teaching, and demonstrations.

(3) Summarizing and interpreting the results

In order to conduct meaningful research, care must be taken in the interpretation of data. This ties back to the importance of a careful statement of the problem and an adequate experimental design. It is easy to selectively survey the literature and "prove" a point by the "historical method" of research.

It is likewise comparatively easy to design an experiment dealing with people to substantiate our present position of prejudice and bias. The physical scientist is less subject to this pitfall, the biological scientist has greater problems, but bias and prejudice are highly significant factors in the conduct of research in the social sciences because the investigator himself is often part of the experiment. It is our responsibility to take a bold and imaginative approach, uncover the facts, and let the chips fall where they may.

(4) Circulation of research findings - publication of results

Research cannot be implemented unless the results are published and made available to all interested parties. Perhaps it is a mistake to say all "interested" parties because it is our responsibility to arouse interest among everyone. All professional groups fall in the same trap. We tell ourselves about our own problems, lick our wounds and go home. We must publish outside our own circles. Fortunately, the climate is right for this and, if you will notice, more and more highly specialized scientific journals, magazines and newspapers, are carrying articles and editorials dealing with students, curriculum and educational problems.

(5) Bringing about change

Research should be future oriented. The best reason for studying the past or analyzing the present is to plan for the future and to bring about change.

One point should be called to your attention here. With the emphasis still directed toward "basic" research, care should be taken to prevent research projects from merely surveying the situation. A quick glance at many research projects in the social and economic fields will illustrate that the first objective is almost always to "survey the situation". Revised projects or new projects also request funds to "survey the situation" and when you tell the researcher that he should now have completed objective number one, he says, "Yes, but the situation has changed and we need to re-survey the situation".

It does little good to conduct surveys unless positive recommendations can be made as to the future. Collection of historical data that merely occupy the file cabinets is not enough. To implement research we need to place our recommendations before scientific organizations, institutions, and the general public. Only then will it be possible to bring about beneficial change.

* * * * * * * * * * * *

REFERENCES

Gallup, George and Evan Hill. 1962. Youth, The Cool Generation. Saturday Evening Post.

Gardner, John W. 1961. Excellence. Harper and Brothers, New York, N. Y.

Hannah, John A. 1963. College Crisis Ahead-What It Means. Interview in U. S. News and World Report, January 21, 1963.

Keppel, Francis. 1959. Education Does Not End. New York Times, November 29, 1959.

McMurrin, Sterling M. 1961. Statement by the U. S. Commissioner of Education, Washington, D. C., April 4, 1961.

Morison, Robert S. 1961. The Need for New Types of Excellence. Daedalus, Fall, 1961.

Naylor, Aubrey W. 1960. Botany and the English University. Address at Birmingham, Alabama, February 3, 1960.

Root, Waverly. 1964. You'd Cheat Too. Washington Post, July 19, 1964.

Thomas, Gerald W. 1963. The Academic Eco-System, Phi Kappa Phi Journal, Winter, 1963, pp. 35-46.

Wriston, Henry M. 1959. The Will to Learn. New York Times, November 29, 1959.

THE CORE PROGRAM IN VOCATIONAL AGRICULTURE ~~IN~~ ARKANSAS

Roy W. Roberts, Head
Department of Vocational Teacher Education
University of Arkansas

Arkansas, like other States, has for many years depended on the use of farm enterprise jobs, together with farm shop jobs, as teaching units in vocational agriculture. This method of subject matter organization is especially useful in teaching farming, but has some shortcomings in teaching for proficiency in non-farming agricultural occupations. During the past few years, relatively fewer students have gone into farming and the need for a different organization of subject matter has become apparent. The supervisory and teacher training staffs in agricultural education have developed a core pattern of organization to meet this need.

The core pattern consists of the organization of subject matter for the first two years of vocational agriculture in teaching units such as introduction to agriculture, soil science, plant science and animal science. These areas, together with agricultural mechanics, constitute the courses of study for Vocational Agriculture I and II. The introductory unit includes orientation, supervised farming, leadership training and a survey of opportunities in agriculture. The objectives of the agricultural sciences are to enable the youth to acquire basic science information that will be useful in a cluster of agricultural occupations. It is expected that these orientation and science units will require about one half of the time available for Vocational Agriculture I and II.

The core program in agricultural mechanics is designed to acquaint the students in Vocational Agriculture I and II with basic principles and skills in drawing; woodwork; sheet metal; finishing, painting and glazing; tool fitting; electricity; concrete and electric welding. The program revolves around the arrangement of the shop into areas of work to permit small group instruction and rotation among areas. Projects and activities are included in the units. It is expected that the core program in agricultural mechanics will require about one-half the time available for Vocational Agriculture I and II.

The subject matter of Vocational Agriculture III and IV will consist of more specialized units for farming or non-farming agricultural occupations. Where feasible, an attempt will be made to relate subject matter to a cluster of agricultural occupations. It is contemplated that such units as specific farming enterprises, agricultural business, forestry, ornamental horticulture, and agricultural mechanics units will be included. The agricultural mechanics units will consist of power mechanics, building, farm machinery and related subjects.

The core pattern for agricultural mechanics and agricultural sciences was developed in a series of conferences and workshops by teachers, supervisors, and teacher trainers in agricultural education. The agricultural mechanics pattern was developed first. A total of 80 departments have completed the required shop organization and 140 have started it. The core program in agricultural sciences was developed during the fiscal year 1963-64. The supervisory and teacher training staffs met monthly during the school year to develop objectives, outlines and format. During the months of June and July, a series of four one-week

workshops was held, in which teachers of vocational agriculture, together with staff personnel, developed the teaching units for Vocational Agriculture I and II. Each workshop included about 80 teachers. About 90 percent teacher participation in the program was secured. It is expected that this pattern of organization will be continued for the development of course content for Vocational Agriculture III and IV.